Forest Carbon Partnership Facility (FCPF)

Readiness Preparation Proposal (R-PP)

Country Submitting the Proposal: Federal Democratic Republic of Ethiopia

Date re-submitted (formal): 07 March 2011

R-PP Table of Contents

List of Abbreviations

Abbreviations	Long Term
BoARDs	Bureaus of Agriculture and Rural Development
CDM	Clean Development Mechanism
CRGE	Climate Resilient Green Economy
ECOWAS	Economic Community of West African States
EDRI	Ethiopian Development Research Institute
EIA	Environmental Impact Assessment
EICTDA	Ethiopian Information Communication Technology Development Agency
ESIF	Ethiopian Strategic Investment Framework
ESMF	Environment and Social Management Framework
EFAP	Ethiopian Forestry Action Program,1994
ETA	Ethiopian Telecommunications Agency
FCPF	Forest Carbon Partnership Facility
FEPA	Federal Environmental Protection Agency
FGM	Focus Group Member
FLEGT	Forest Law Enforcement, Governance and Trade
FoWDA	Forest and Wildlife Development Authority
FRA	Forest Resource Assessment of the FAO
FUG	Forest Users Groups
GGGI	Global Green Growth Institute
GO	Governmental Organization
HFPAs	High Forest Priority Areas of Adaba, Dodolla Bonja, C.hilimo, Yabello
IBC	Institute of Biodiversity Conservation Ethiopia

ISD	Institute of Sustainable Development
MoCT	Ministry of Culture and Tourism
MoA	Ministry of Agriculture
MOFA	Ministry of Foreign Affairs
NFP	National Forest Program
NFPA	National Forest Priority Areas
NGO	non-governmental organization
NHF	Natural High Forest
NTFP	Non-timber forest products
OSFESA	Oromia State Forest Enterprises Supervising Agency
PDD	Project Design Document
PES	Payment for environmental services
PFM	Participatory Forest Management
PLC	Public limited company
PSNP	Productive Safety Net Program
REDD	Reducing Emissions from Deforestation and Forest Degradation
REPA	Regional Environmental Protection Agency
R-PIN	Readiness Plan Idea Note (FCPF-Format)
R-PP	Readiness Preparation Proposal (FCPF-Format)
RSC	REDD Steering Committee
RRSC	Regional REDD Steering Committees
RRTWG	Regional REDD Technical Working Groups
RTWG	REDD Technical Working Group
SESA	Strategic Environmental and Social Assessment
SL	Shrub lands
SLMP	Sustainable Land Management Program
SNNP	Southern Nations, Nationalities and Peoples

SNNPRS	Southern Nations Nationalities and Peoples Regional State
TSFG	Topic Specific Focus Groups
SWOT	Strengths, weaknesses, opportunities and threats
SWR	Strengths, weaknesses, recommendations
TOR	Terms of Reference
VPA	Voluntary partnership agreements
WBISPP	Woody Biomass Inventory and Strategic Planning Project
WL	Woodlands

General Information

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[1] This list contains mainly members of the REDD Technical Working Group. However, many regional experts/individuals who are not listed here also contributed in the facilitation of regional consultations and in bringing feed back for the R-PP.

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Overview and Structure of the R-PP

The Readiness Preparation Proposal (R-PP) for Ethiopia lays out a plan for Ethiopia to get ready for REDD (Reducing Emissions from Deforestation and Forest Degradation) implementation.

The R-PP is the first part in a three step process as outlined in Figure 1

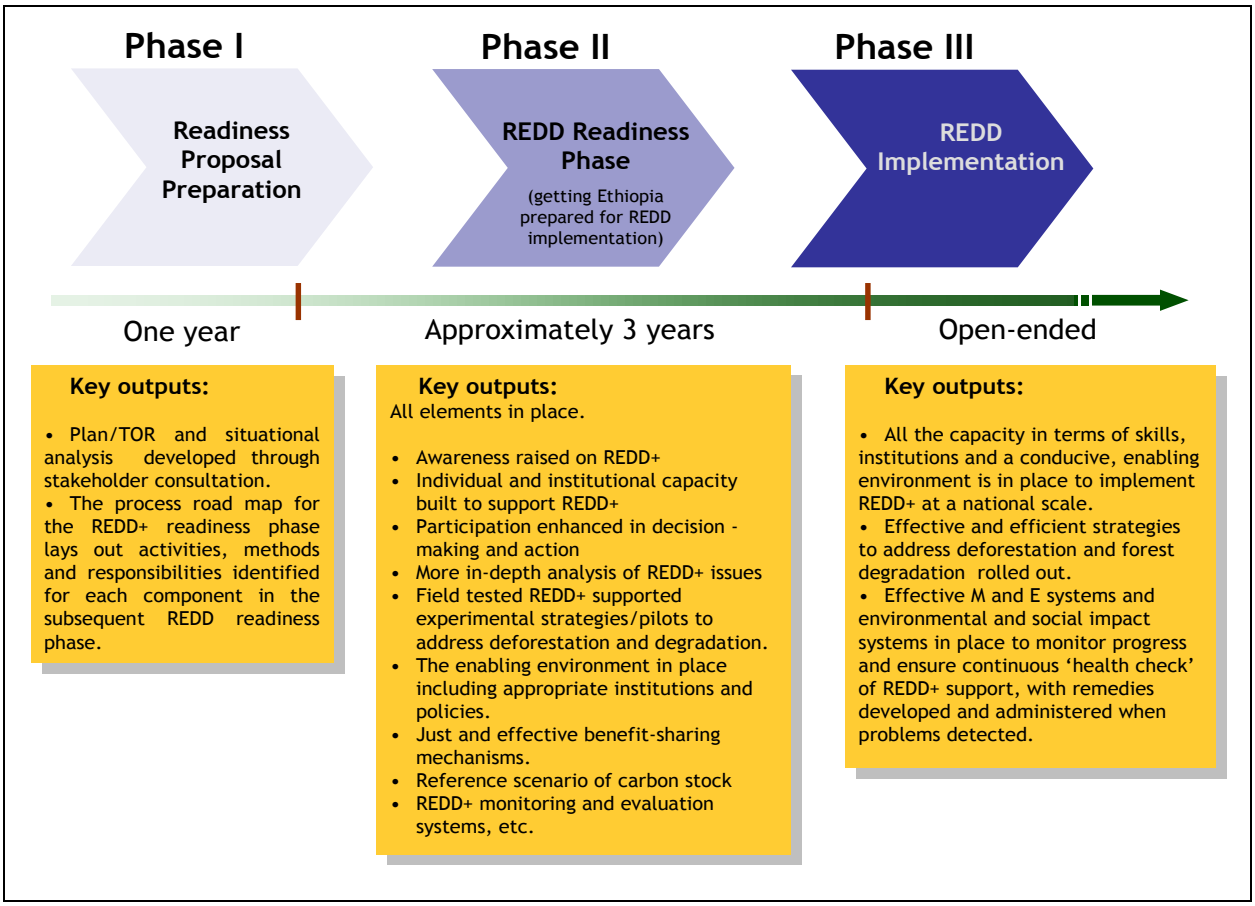


Figure 1 Overview of the purpose and structure of the R-PP

REDD Readiness Wheel (RRW)

There are six main components of the R-PP which together form the "REDD Readiness Wheel (RRW)" (see Figure 2). It is recognized that all parts are interconnected and that some components act as the axel in the centre connecting all the other parts and moving the process forward.

The following diagram can also help guide the reader through this document. The ovals represent chapters and sections as well as the interconnected components for REDD development:

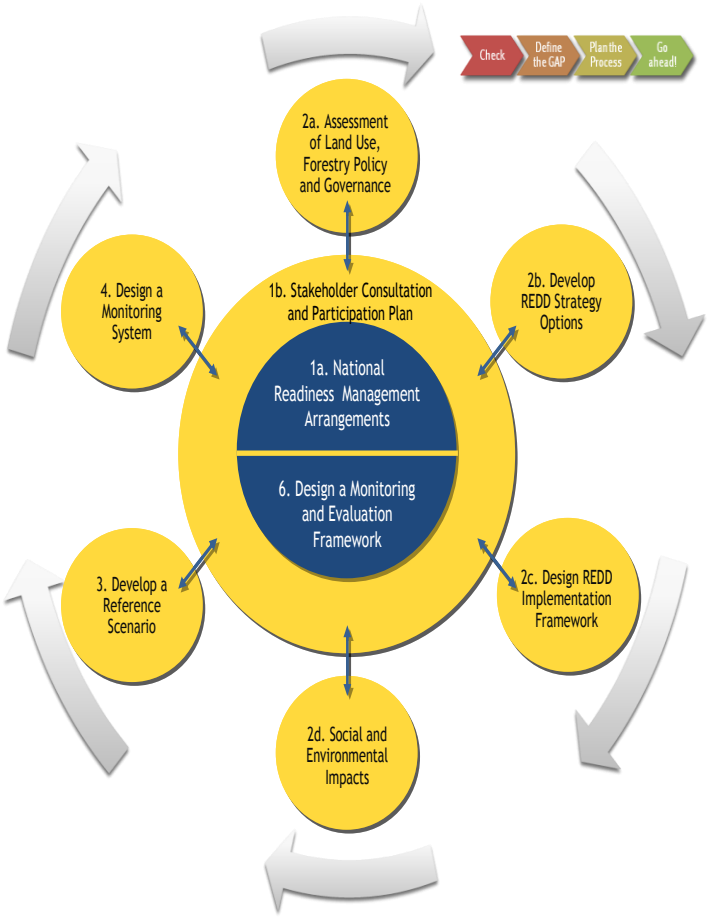


Figure 2 Project Overview

Executive Summary

A summary of the main findings of the 6 R-PP components is provided below.

Overall timeline and expected deliverables

The Figure 3 below presents a preliminary overview of the timeline and deliverables from the R-PP implementation process detailed in this document. Each activity refers to specific sections.

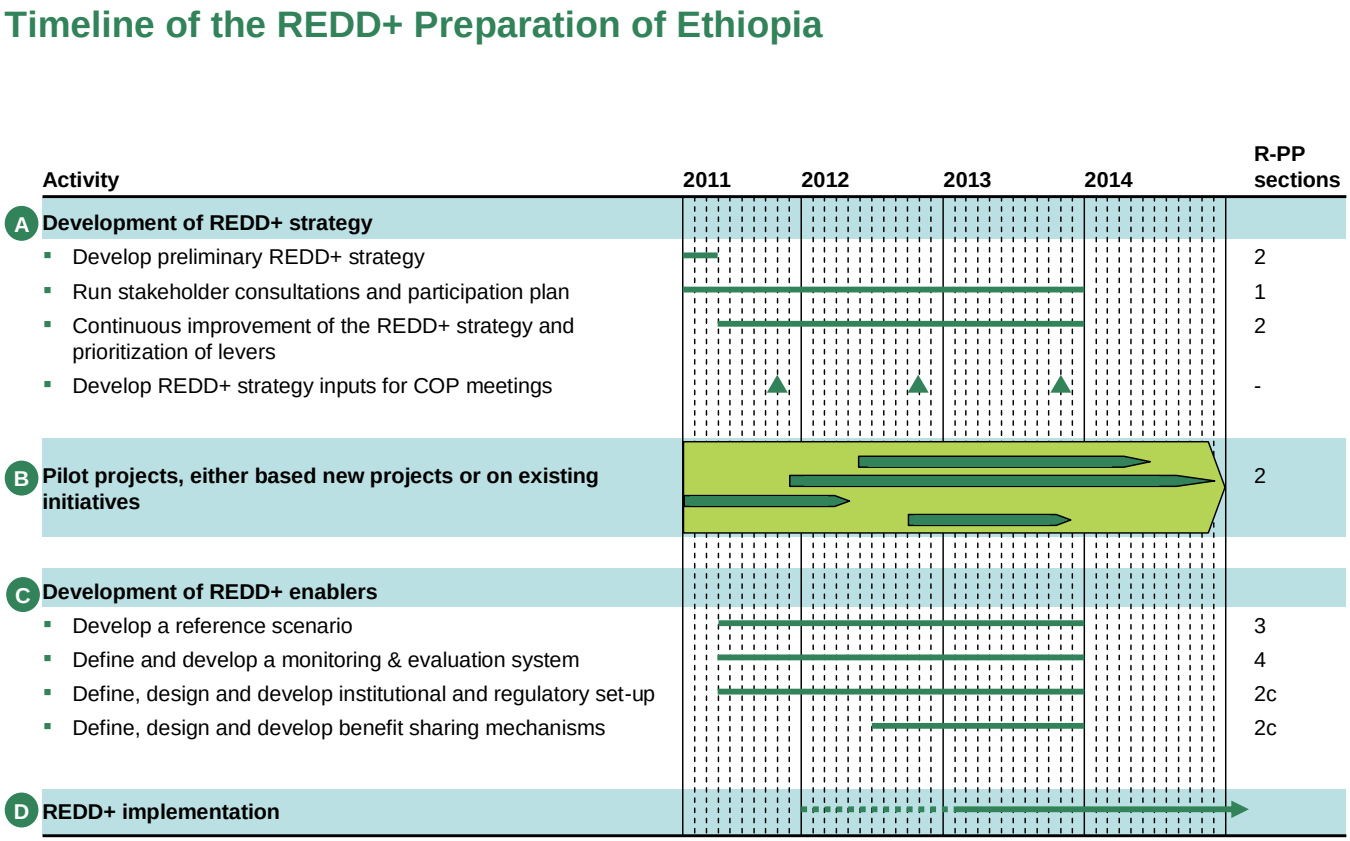


Figure 3: Timeline of the REDD+ preparation

During the first phase of work, aimed at developing a preliminary REDD+ strategy, this timing will be tested and refined. Each main action and deliverable will be developed in a more granular way, based both on the actions planned in the R-PP and further consultations, analyses and learning from ongoing pilots.

1a. National Readiness Management Arrangements

At the centre of the REDD Readiness Wheel (see Figure 2) are the National Readiness Management Arrangements. These arrangements are part of the Climate Resilient Green Economy initiative (CRGE) developed by the Ethiopian Government, that coordinates the main sectors of the economy to develop an environmentally sustainable growth path in Ethiopia.

Arrangements regarding REDD+ involve the Environmental Protection Authority (EPA) of Ethiopia which is chairing the REDD+ readiness process. Its role is to facilitate, coordinate and spearhead this inter-ministerial process by bringing together relevant stakeholders to engage in decision-making and action. At the federal level there is currently a REDD Steering Committee (RSC) and REDD Technical Working Group (RTWG). Both are currently being chaired by EPA, but these responsibilities shall be handed over to a dedicated federal agency responsible for forestry when it is created. Currently, REDD+ structures are under development in the regions to reflect Ethiopia's devolved federal structure.

The activities planned under this sub-component, during R-PP implementation, include expanding the scope and reach of the structures, including district level, so that they are firmly anchored in the local realities of forest dependent peoples yet with links to the highest level political decision-making processes in the country.

1b. Stakeholder Consultation and Participation plan.

An extensive stakeholder consultation was conducted during R-PP development. The consultations included 2 national-level workshops, 7 regional-level workshops, 1 Zonal level Workshop, 9 workshops at Woreda[2] level and 9 community consultations with forest dependent peoples in the following Regions: Amhara, Oromia, Southern Nations and Nationalities, Tigray, Benshangul Gumuz, Gambella and Somali. Questionnaire surveys and personal interviews were also carried out.

A wide range of participatory methods were used to maximize engagement. The various interactions were used as a testing ground for various awareness-raising and capacity-building approaches and testing materials. As a result, a 'toolbox' of tried-and-tested methods has been developed and is included in this R-PP.

The action plan for this sub component lays out a step-by-step process that recognizes that participation is not a once-off event but a continuous process leading to the institutionalization of participation. In this manner, those most affected by REDD+ decisions and actions will have a strong input.

2a. Assessment of Land-Use, Forestry Policy and Governance

This part outlines key insights into all factors that affect deforestation and forest degradation in Ethiopia. The causes are complex and interconnected but two main drivers of deforestation and forest degradation have been emerging.

The most prominent driver is conversion of forests to agricultural land, as agriculture is more attractive than forestry. The impact of this deforestation driver is set to increase, as agricultural land requirements will increase by an estimated 19 MHa by 2030 in a 'business

[2] Administrative division managed by a local government, equivalent to a district

as usual' growth path, spurred by strong governmental support to develop agriculture and sustained demographic growth of 2-3 % per year.

The second most prominent driver, with most of its impact focused on forest degradation, is unsustainable fuel wood consumption. Ethiopians largely rely on fuel wood for their energy consumption, and current needs largely exceed the level of sustainable production (e.g. from dead wood and plantations), leading to massive degradations of the biomass, estimated to 14 Mt in 2008 (Source WBISPP). As the evolution of fuel wood consumption is strongly correlated to population growth, its impact on degradation is expected to reach, in a 'business as usual' scenario, 22Mt per year by 2030, as the Ethiopian population reaches 130 Mln people.

These drivers have been enabled by deficiencies in the regulatory and institutional environment: Unclear user rights, low empowerment of local communities and absence of benefit sharing mechanisms encouraged an "open access" mentality and conversion to agriculture. Inappropriate regulation, or the absence of means of implementation, combined with the absence of a strong, dedicated forestry institution, failed to protect forests.
There are also various promising actions in Ethiopia that have been effectively addressing deforestation and degradation in socially acceptable ways, of note is the Participatory Forest Management program. A significant challenge is that there is currently no dedicated forestry institution at the national level and the vacuum has been filled by a variety of institutions with sometimes unclear, uncoordinated and overlapping roles and responsibilities. Without a strong forest sector, other initiatives have been gaining ground at the expense of forestry, notably the expansion of large-scale agribusiness in areas of natural forest.

Activities planned during R-PP implementation include an urgent assessment of the impact of agri-business on natural forest and forest dependent peoples, a full mapping of the complex and overlapping institutional and policy arrangements for forestry as well as better and more coordinated assessment of the experiences with existing REDD+ pilots in the country.

2b. Develop a REDD+ Strategy

This section combines two sources of input to build the REDD+ strategy. First, the development of the REDD+ strategy will build on the existing experience and structures developed locally, and will enable a broader learning experience for all affected stakeholders. Second, it will leverage existing preliminary assessments[3] of the main mechanisms to mitigate deforestation and forest degradation, to identify new strategy options, to explore and define the key enablers required at regulatory and institutional level.

The mitigation levers identified based on preliminary studies focus on addressing the main two drivers of deforestation and degradation (conversion to agricultural land and unsustainable fuelwood consumption), through a combination of proposed measures to increase agricultural yields, better manage soils and forests and adopt alternative energy sources and energy efficient stoves. These mechanisms will need to be further analysed, refined and prioritized in the coming months, as they will also benefit from the experience of the REDD pilots.

[3] Ethiopia Green Growth project conducted in 2010 by EDRI with the support of the global Green Growth Institute (GGGI)

Based on the previous work conducted on the field and the preliminary assessment of the mitigation levers, a series of pilots will be identified. This could range from Participatory Forest Management and Conservation approaches, which support strengthened local user rights and sustainable forest management, to various initiatives designed to take pressure off the forest resources; including better management of previous plantations, and support for bamboo growth and use and intensified agroforestry. All pilots will be assessed at the end of the R-PP implementation according to various criteria, including effectiveness, efficiency and social justice. The better-performing strategies will be identified to scale up. The development of a REDD+ learning network and a REDD+ good-governance project which supports the development of good governance around REDD+ pilots are other key activities outlined in this sub component.

Main changes in the regulatory environment to enable the proposed mitigation mechanisms to be implemented should, according to the consultations led in the preparation phase, focus on local people's rights, developing a dedicated forestry institution and better coordinating land use planning.

2c. Design REDD implementation Framework

Building from the outputs of 2a and 2b, we lay out tactical actions to address gaps in the enabling institutional and policy environment with regards to forestry. We also lay out the specific building blocks necessary for REDD+ administration. With regards to the enabling environment, support will be provided to build on existing strengths in policy to further reinforce and clarify the user rights of forest dependent people as this has been identified as a fundamental prerequisite for sustained protection of the forest. Also in the absence of a forestry institution at national level, a cross sectoral body is suggested to address the lack of clarity in roles and responsibilities. This will also address challenges to forestry being posed by policies of various authorities – including investment policies related to agri-business development.

With regards to REDD+ administration itself, during R-PP implementation a structure will be developed with the prior consent of the Environmental Council to provide all the necessary functions for effective REDD+ implementation. This will include a body that bypasses normal administrative budgetary functions to ensure timely dispersal of REDD+ funds from national to local level. Transparent, user-friendly accountancy systems and separate auditing systems will also be developed.

2d. Social and Environmental impacts

Rather than being a separate sub component, 2d should be an integrated element of 2a, 2b, and 2c to ensure that the REDD strategy is developed around a set of checks and balances. This provides a safety net for forest stakeholders and ensures that lessons are learned fast and that no harm is done. The activities laid out in this component are step-by-step processes that draw on international and national best-practices to develop a trial Environmental Social and Management Framework. By the end of R-PP implementation this framework is then tested, revised and institutionalized, including the development/adaptation of any supporting legal provisions.

3. Develop a reference Scenario

This section lay out how to develop a reference scenario to estimate carbon stock. This generates the proof that REDD+ support is being effective in capturing carbon through avoided deforestation and degradation.

4 Design a monitoring system

This section lay out how to design an appropriate monitoring system for measurable and verifiable (MRV) emissions.

Both sections of reference scenario and monitoring system draw on various sources of data including the results of a comprehensive World Bank-supported Woody Biomass survey. An inventory of existing data, studies and expertise is laid out with strengths and gaps identified. Methodology that adheres to international best-practice guidelines, but that is adapted to the Ethiopian context is laid. Planned activities relate to addressing gaps in capacity and expertise, finding which data requirements to fill and defining methodology and steps to institutionalize continuous MRV in Ethiopia.

5. Schedule and Budget

Activities to formulate the R-PP were started in 2010. The thus formulated R-PP will continue to be implemented by EPA for 4 years until the end of 2014. The money needed for this is estimated at U.S $ **14,115,000**. The allocated budget for various activities of the R-PP is an indicative and thus subject to review as deemed appropriate.

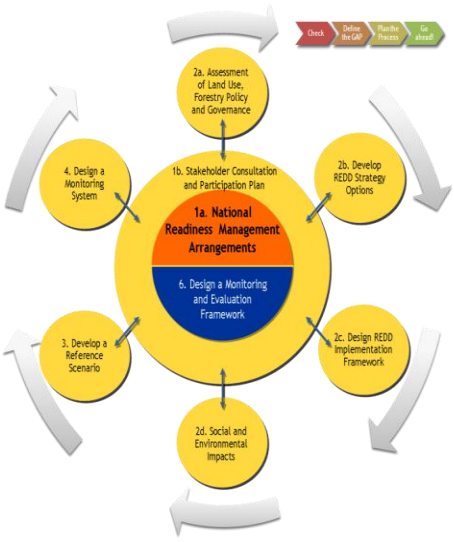
6**. Design a Monitoring and Evaluation Framework**

The R-PP implementation M&E framework forms a central part of the REDD readiness arrangements as it helps to monitor progress with respect to the TOR/action plan of each component. It is placed beside the National Readiness Management Arrangements to show that this is a key role of the various management bodies. The outputs from the M&E Framework then feed into and inform the National Readiness Management Arrangements decision-making so that they can troubleshoot and feed lessons back into R-PP implementation quickly so that adjustments can be made.

The monitoring framework will be built on different indicators for each R-PP component but will generally be guided by the elements - SMART (Specific, Measurable, Achievable, Relevant and Time-bound).

Component 1: Organize and Consult

1a. National Readiness Management Arrangements



National cross ministerial framework for environmentally sustainable growth

The Ethiopian government initiated in 2010 the Climate Resilient Green Economy initiative (CRGE), which aims at developing in Ethiopia an environmentally sustainable economy and offsetting the potential impact of ambitious growth plans by 2030 in terms of GHG emissions.

Figure 4: Component 1a in the REDD readiness wheel

This initiative encompasses 8 key sectors (Forestry/REDD, Energy, Buildings/cities, soils, livestock, industry, transport and Health) that will play a significant role in the sustainable development of the country. It aims at taking a comprehensive approach, to make sure that no key GHG abatement lever is neglected and that any interdependency between sectors is taken into account (e.g. the impact of increased livestock populations on forests).

Through this process, the Government of Ethiopia also plans to develop its enabling institutions/functions including the handling of the financial instruments, the MRV capacity building as well as the integration with the overall economic development plan of Ethiopia.

Figure 5 presents the objectives of the CRGE initiative, and Figure 6 presents its organisational structure, gathering the main economic sectors in dedicated Sub technical committees, that have started their work in 2011. Forestry, through the REDD+ initiative, is a key component of this nationwide and cross-ministerial effort. This structure will play a key role in coordinating the REDD+ activities with the initiatives taken in other sectors.

Coordination within the CRGE initiative will offer the opportunity for the REDD+ structure to leverage the enabling factors developed by the CRGE (Overall program management, Financial instruments, Monitoring, Reporting and Verification systems, capacity building and trainings, dissemination/communication and advocacy capacities)

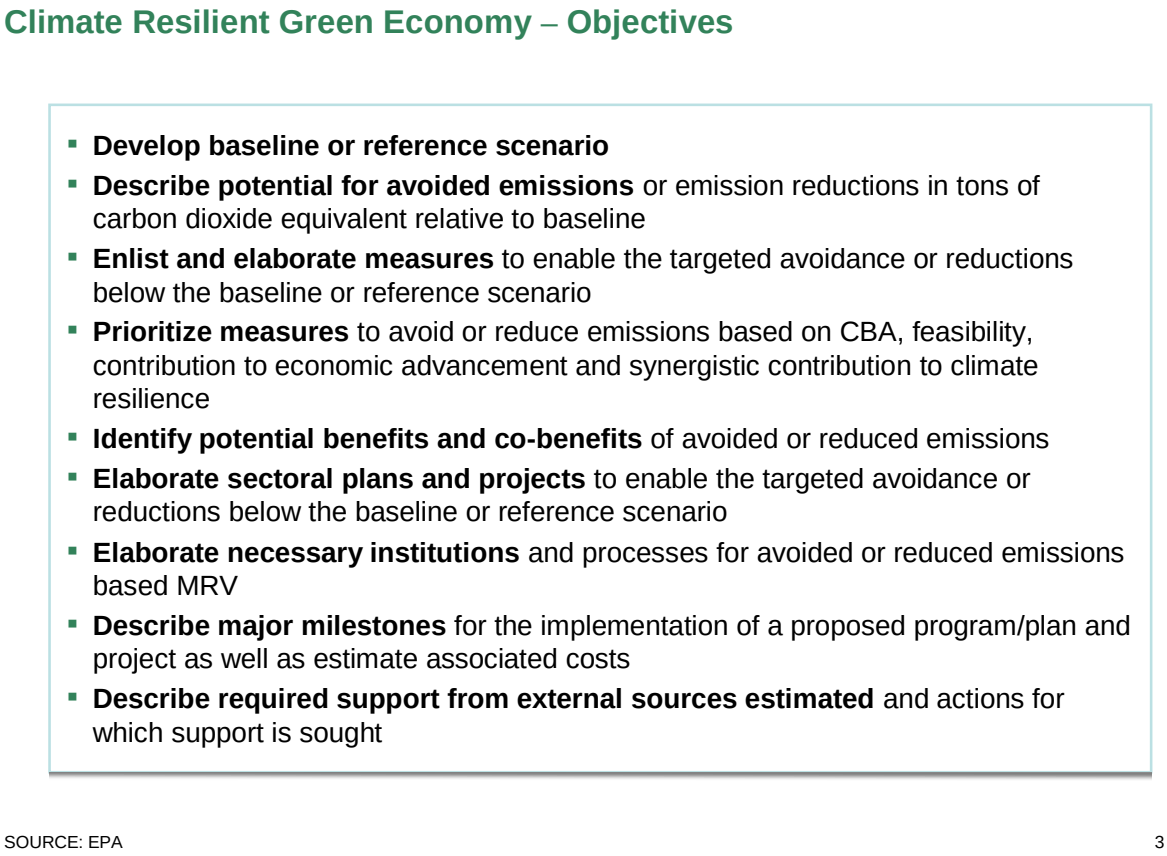


Figure 5: Objectives of the Ethiopian Climate Resilient Green Economy (CRGE) initiative

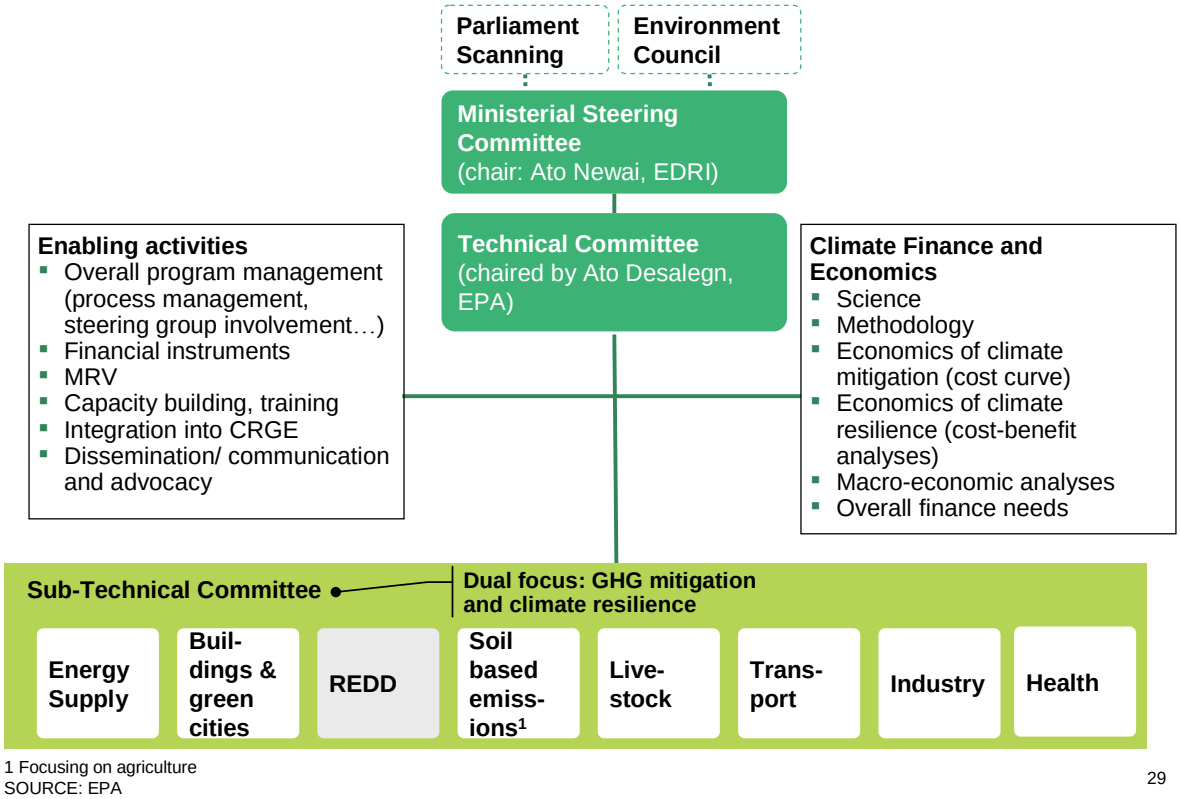


Figure 6: Management structure of the Climate Resilient Green Economy

National Readiness Management Arrangements for the REDD+ initiative

As presented in Figure 7, the specific organizational structure of the REDD+ initiative relies on several federal and regional structures: The Federal Level REDD Steering Committee (RSC), the Federal Level REDD Technical Working Group (RTWG), the Topic Specific Focus Groups (TSFG), the Regional Level RSC and RTWG and the REDD Secretariat.

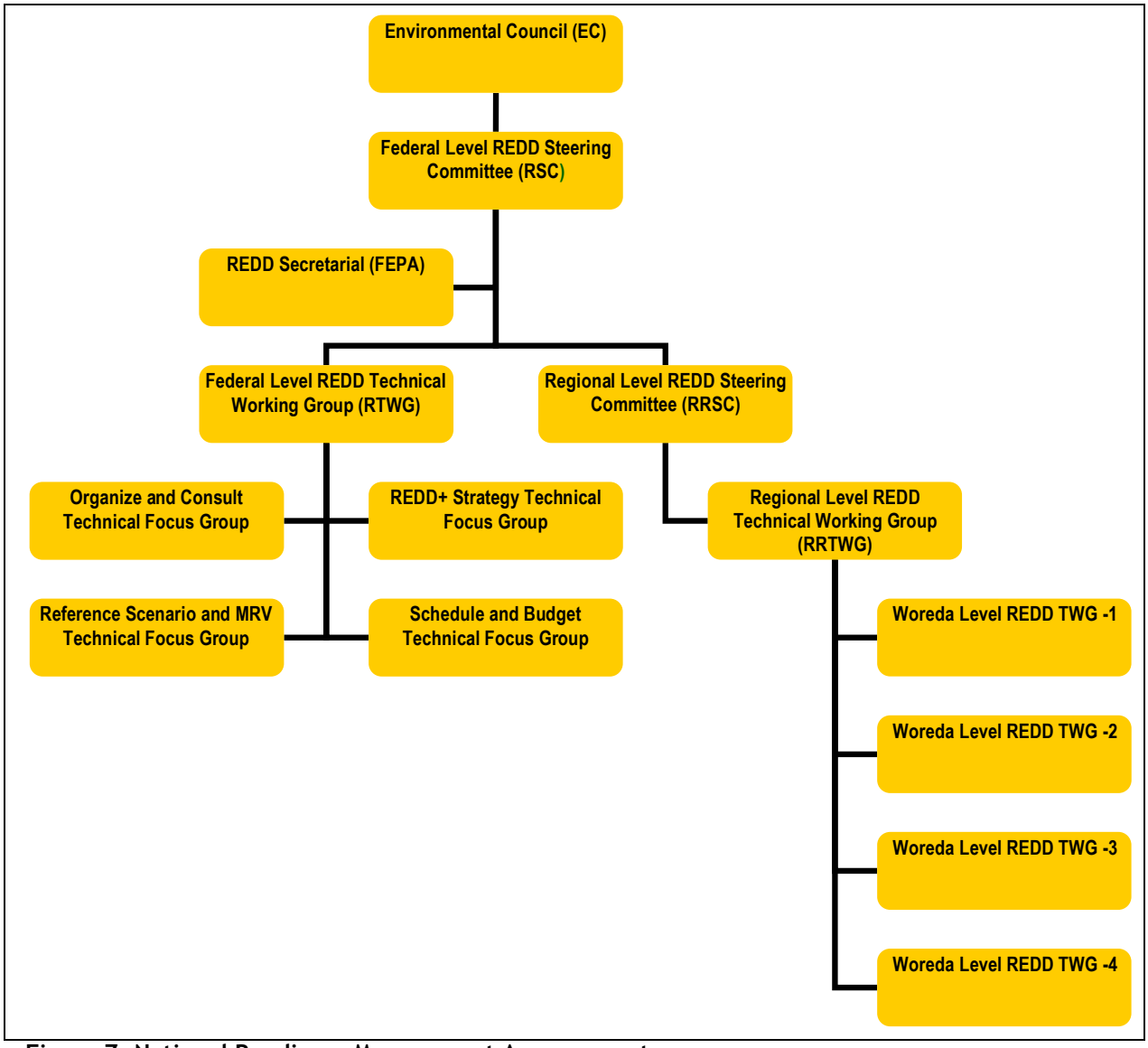


Figure 7: National Readiness Management Arrangements

The REDD readiness process is a cross ministerial process, currently chaired by the Environmental Protection Authority (EPA) and involving several sectors of the Ethiopian society, essentially agriculture, economic development, forestry and wildlife and environment conservation. Its role is to facilitate, coordinate and spearhead the process by bringing together relevant stakeholders to engage in decision-making and action. The views expressed by the consultations of stakeholders, which included representatives of the MoA is that the focus of MoA is agriculture and EPA should continue to chair the REDD readiness process until a dedicated federal body is created for forestry. The problem is encountered in the regions as well, with Oromia and Amhara being the exceptions in having their own respective forestry enterprises.

- **The Federal Level REDD Steering Committee (RSC)** is made up of high level representatives from regional government, relevant bureaus, an NGO umbrella organization and from different relevant sectoral ministries (see Table 1). It is currently chaired by EPA. Its main functions are an advisory and guiding role, and the linking of REDD issues and activities to senior government (specifically the

Environmental Council, chaired by the Prime Minister, with members drawn from Federal Ministries, Presidents of National Regional States, representatives of non-governmental bodies, the private sector and trade unions) and high-level political decision-making processes.

- **The REDD Technical Working Group (RTWG)** is made up of active practitioners in the REDD+ field, with representation from research, academic, government, development and NGO organizations. These technical experts are responsible for the day to day management of the REDD+ strategy development. The RTWG also plays a key role in ensuring good coordination between the activities related to REDD+ and the other sectors, as a selection of its members take part to the REDD Sub Technical Committee of the "Climate Resilient Green Economy" initiative.

  The RTWG, like the RSC, is currently chaired by EPA because there is yet no other effective federal agency which is responsible for forestry to chair either. Defining the most appropriate institutional set up would be part of the deliverables of the REDD readiness process over the next coming months, as developed in section 2c. For this reason, the EPA's intention is that, when the RTWG has gained experience and knowledge on REDD+ issues, it could be chaired by a member not drawn from the EPA

- **At Regional State level,** similar arrangements are under development to ensure an effective, devolved REDD implementation system that is consistent with the Federal-level organization. These regional level bodies are called **Regional REDD Steering Committees (RRSC)** and **Regional REDD Technical Working Groups (RRTWG)**. These will ensure more representation within each region, with an emphasis on multi-stakeholder representation (including community representation). The trained human capacity is low in the whole of Ethiopia, but it is comparatively better in the four high regions (Southern, Oromia, Amhara and Tigray). As soon as the regional trained human capacity allows, consultations will include all the regions and the membership of the RTWG will become truly representative. All the regions are being helped to acquire the needed expertise. Below the regional level there will be a further tier of working groups set up at district (Woreda) level in various pilot REDD+ sites. These will be mainly composed of a representative mix of community delegates and local government, as well as any development partners present. These Woreda working groups are set up to ensure that local level REDD+ decision making and actions are developed through a democratic process of free, prior and informed consent, where forest dependent people have a key voice. They will also ensure a fast response to any issues that arise in the pilot sites.**Topic Specific Focus Groups (TSFG)** at Federal level are under development and more will be developed as specific needs arise. The sub groups will be made up of topic specific experts/practitioners, and will have a multi-disciplinary focus so that topics are addressed in a holistic and integrated manner. TSFG members will provide expert advice to guide the steering committees and working groups. Sometimes these sub-groups might include contracted individuals and institutions working on a temporary basis, with their terms of reference referring to particular development milestones within that sub-group.
- Following the finalization of the Readiness Preparation Proposal (R-PP), the EPA will establish a separate unit equipped with appropriate staff and facilities from within

the EPA to act as a **REDD secretariat**. This National REDD Secretariat will liaise with each regional administration level environmental protection office[4] which will become the REDD Secretariat for its administrative region. If seen as needed during the implementation of the R-PP, each region environmental protection office will be represented by a REDD Officer in each respective Woreda administration. Its role will be to coordinate and provide support to all of the management bodies, and to ensure good communication and integration as well as administrative and organisational support. This will include a reporting, accounting and auditing system which will provide clear roles, responsibilities and time-bound outputs for all bodies. Procedures for reviewing and revising the composition of all REDD+ management bodies will be set out, with regular performance reviews taking place at the various planned events.

There will also be an emphasis on strengthening the community-based organizations that currently represent forest-dependent communities (e.g. the participatory forest management cooperatives and unions, forest user association as well as forest enhancer and user local community). This will include linking these organizations with REDD+ decision making bodies, so that they will have a stronger voice at higher levels in REDD+ decision making.

In addition to the different formal (sub) working groups and committees there will also be regular stakeholder forums to bring together different stakeholders and exchange experiences. Specifically this will unite both representatives of forest-dependent people and official REDD+ representatives to facilitate experience sharing, lesson learning and joint strategic planning. Field programs will also be organized which aim to ensure that decision makers from various levels interact with forest-dependent communities (especially at REDD+ pilot sites) to allow them to witness the concrete effects of REDD+ support and to hear local opinions and recommendations on the achievements and challenges of improving REDD+ support.

It should be emphasized that there will be very little, if at all, overlap in the membership of this hierarchal working groups and thus, far from adding complexity, these working groups at the different administrative levels will become more accessible at the respective level than would have been the case if there were only countrywide working group only.

The R-PP document will in effect act as the terms of reference (TOR) for the national management arrangements, which in turn will act to coordinate the R-PP 'wheel' of activities (see **Error! Reference source not found.**4 above) and ensure that things move forward effectively and transparently.

The key tasks which make up the national management arrangement's TOR during the implementation of this R-PP include:

- **Participation and communication:** enhancing stakeholder participation mechanisms, and undertaking all necessary capacity building and awareness raising activities
- **Assessments:** conducting assessments of past experiences regarding strategies, policies, programmes and projects that have influenced deforestation and degradation (including examinations of land use, governance and policy issues)

[4] All the National Regional States have established or designated their own respective environmental protection organs.

- **Piloting approach to strategy development:** supporting existing or developing REDD+ pilot activities that address the drivers of deforestation/degradation. Development of a learning strategy to harness lessons learnt from these pilots
- **Development and implementation framework for an enabling environment: reward/penalty, motivation, support and** institutional strengthening/adaptation relating to policy and governance, in order to ensure a conducive institutional environment for REDD+ implementation.
- **Developing Social and Environmental Safeguards:** developing a strategic social and environmental management framework based on national experience, the World Bank Safeguard policies and other relevant international instruments.
- **Carbon stock reference scenario and monitoring system development:** comprising development of a baseline carbon stock and other co-benefits reference scenario and associated monitoring system to monitor and evaluate carbon stock during REDD+ implementation at national/ regional level.

Coordinating, Monitoring and Evaluation: the national management arrangements will also have ultimate oversight across all the aforementioned activities, with responsibility for coordinating, supporting and evaluating their implementation.

How these various bodies fit together in the National Management Arrangements is highlighted in the Table 1 and Figure 4:

Table 1 Members of the RSC

No.	Organisation	Role in RSC
1	EPA	Chair
2	MoA	Member
3	MoFED	Member
4	MoWR	Member
5	MME	Member
6	EWCA	Member
7	Parliamentarian: Natural Resources Standing Committee	Member
8	NGO Representative: FfE (Forum	Member

No.	Organisation	Role in RSC
	for Environment)	
9	Private Sector: Ethiopian Chamber of Commerce	Member
10	Kaffa Forest Coffee Union	Member
11	Chilimo Forest Conservation Union	Member
12	Oromia Land and Environment Protection Bureau	Member
13	Amhara EPLAUB	Member
14	Tigray EPLAUA	Member
15	SNNPRS EPLAUA	Member
16	BGRS EPLAUA	Member
17	Gambella RS EPA	Member
18	Somali RS Environmental protection & Energy Bureau	Member

Table 2 Current members of the REDD Technical Working Group (RTWG)

	Name	Organisation	Role in the working group	Responsibilities (if defined)	Key expertise
1	Shimeles Sima	EPA	Chairman for the interim period	Lead the work of the RTWG	Environment
2	Zewdu Eshetu (PhD)	Ethiopian Institute of Agricultural Research	Member	Strategy Option focus group	Forestry
3	Desta Gebremichae	Relief Society of Tigray	>>	Regional consultation and	Natural - Resources

	Name	Organisation	Role in the working group	Responsibilities (if defined)	Key expertise
	lGebrekidan			participation	Management
4	Yonatan Jerene	Southern Region Development Association (SRDA)	>>	>>	Natural Resources Management
5	Negash Mamo	Forestry Research Centre	>>	>>	Forestry
6	Dr. Alishum Ahmed	Institute of Biodiversity Conservation	>>	Strategy option focus group	Biodiversity
7	Melaku Tadesse	Ministry of Agriculture and	>>	>>	Forestry
8	Girma Amente (PhD)	Oromia Forest and Wildlife Enterprise	>>	Organize and consult, and Schedule and budget focus group	Forestry
9	Beneberu Shimeles	Haramaya University	>>	>>	Forestry
10	Meley Mekonen	Mekelle University	>>	Reference Scenario & MRV focus group	GIS Remote Sensing
11	Dereje Agonafir	EPA	>>	Strategy option focus group	Environment
12	Ababu Anage	UNDP	Member	Organize and consult, and Schedule and budget focus group consult focus group	Forestry
13	Lakew Berhanu	EWCA	Member	>>	Conservation Biology
14	Anouska Kinahan	FZS	Member	>>	
15	Sisay Nune	NABU	Member	Regional consultation and participation	Forestry
16	Ben Erwin	Farm Africa/SOS Sahel	Member	>>	REDD - Consultation and Participation

	Name	Organisation	Role in the working group	Responsibilities (if defined)	Key expertise
17	Tsegaye Tadesse	>>	Member	>>	REDD-Consultation and Participation-Forestry
18	Getachew Alamrew	Amhara National Regional State Environmental Protection, Land Administration and Use Bureau	Member	>>	Environment
19	Ahmed Hussein	Oromia NRS - Land and Environmental protection Bureau	Member	>>	Environment
20	Misrak Kumalo	Southern Nations, Nationalities and Peoples Regional State (SNNRPS) Environmental Protection, Land Administration and Use Authority	Member	Regional consultation and partcipation	Environment
21	Tesfaye Abebe	Ministry of Mines and Energy	Member	>>	Renewable Energy
22	Tesfaye Woldeyes	EPA	Member	Reference Scenario & MRV focus group	Forestry
23	Kiflu Segu	Ambero-GITEC, Oromia	Member	>>	>>
24	Dr. Assefa Seyoum	Environment &coffee forest forum	Member	Regional consultation and participation	Forestry
25	Shewaye Deribe	Ethio Wetlands and Natural	Member	>>	Wetlands Management

	Name	Organisation	Role in the working group	Responsibilities (if defined)	Key expertise
		Resources Association			
26	Dr. Girma Balcha	Climate Change Forum	Member	>>	Biodiversity
27	Kibra Alemseged	Tigray National Regional State Environmental Protection, Land Administration and Use Agency	Member	>>	Environment
28	Wondwossen Sintayehu	EPA	Member	Strategy option focus group	Environmental law
29	Berhanu Solomon	EPA	Member	Reference Scenario & MRV focus group	GIS and Remote sensing
30	Belete Geda	EPA	Member	Strategy option focus group	Environment

Table 3 Summary of National Readiness Management Arrangements Activities and Budget

Table 3: Summary of National Readiness Management Arrangements Activities and Budget						
Main Activities	**Sub-Activities**	**Estimated Cost (in thousands USD)**				
		2011	**2012**	**2013**	**2014**	**Total**
1. Functioning of Federal RSCs and RTWGs	Federal level RSC and RTWG meetings, travel, etc.	60	60	20	20	**160**
2. Functioning of Regional level RSCs, RTWGs and Woreda (district)level TWGs	Regional level RSC, RTWG and Woreda level (Meetings, travel, etc.)	150	190	60	70	**470**
3. Setting up REDD Secretariat	Hire 2 general admin staff, one accountant and one communication officer and provide office space	30	30	30		**90**
4. Communication costs	Phone, internet, reports preparation and distribution etc.	20	20	20		**60**
TOTAL		**260**	**300**	**130**	**90**	**780**
Government		50	50	20	20	140
FCPF		60	60	20	10	150
UN-REDD Programme		50	80	20	30	180
Nordic Climate Facility –NCF		70	70	50	20	210
French development Agency-AFD		30	40	20	10	100

1b. Stakeholder Consultation and Participation

Figure 8: Component 1b in the REDD readiness wheel

The purpose of the Stakeholder Consultation and Participation Plan (SCPP) is to provide guidance on all aspects of the 'Why?' 'How?' and 'What?' of participation and consultation, and in particular to ensure that key forestry stakeholders are given an opportunity to be involved in REDD+ related decision making that impacts upon them. The key principle that this plan will ensure is put into practice is free, prior and informed consent of affected stakeholders in any decision making regarding any REDD+ activities.

The Plan is not an extra distinct component in the R-PP – instead it is an underlying, cross cutting approach which affects how each R-PP component will be developed and implemented. This is why it is represented at the centre of the visual, linked to all other components.

The outcomes of all the consultations held so far form the basis of the R-PP's content. Key stakeholders at national and regional level, as well as representatives of forest dependent communities, have been engaged in its development. For an example of the outputs of one such national consultation workshop, see Annex 1b-1.

Table 4 that follows provides an overview of all consultations held so far.

Consultations held so far in the development of the R-PP

Table 4 Consultations held so far in the development of the R-PP

Consultation approach	Purpose	Who involved
First national consultation workshop	Awareness-raising on the R-PP and REDD process, managing expectations. Conducting an initial consultation on issues pertinent to R-PP preparation, including exploration of both underlying drivers of deforestation and also lessons from existing degradation and deforestation strategies. Testing and showcasing participatory methods that are contained in the Annex 1-b in this R-PP. Basic SWOT analysis with regards to capacities and awareness with regards to the REDD+ strategy development phase.	60 participants representing all key government ministries, development partners and non government institutions involved in forestry in Ethiopia.

Consultation approach	Purpose	Who involved
Face to face meetings with practitioners involved in REDD pilots	Trying to ensure that the R-PP builds on existing knowledge and activities (e.g. pilots) relevant to REDD+.	Farm Africa SOS Sahel. NTFP-PFM South West Ethiopia project. (both implementing REDD+ pilots)
Questionnaire	The questionnaire had two objectives, as an awareness tool with regards to raising awareness of the form and function of the R-PP, and to capture detailed information from informed individuals on all aspects pertinent to the R-PP development.	Questionnaire circulated to 80+ relevant experts, within Ethiopia and internationally.
Second national consultation workshop held on June 17th and 18th	This workshop provided an opportunity for a broader stakeholder group to have input into the development of the R-PP. Issues that emerged in the first national consultation workshop were discussed and analysed in more depth. An action plan to broaden participation in developing the R-PP was also designed.	Key forestry stakeholders from all relevant government and non-government organisations (60 participants).
Woreda and Community level consultation with forest dependent people in 4 different regions - July and August 2010 (Amhara Region, Oromia Region, Southern Region, Tigray Region)	Field visits in 3 specific regions to interact with forest dependent stakeholders to achieve two aims: 1) to raise awareness on REDD and the R-PP; 2) to facilitate analysis around the underlying drivers of degradation and deforestation from the perspective of forest dependent people, and to identify potential strategy options to address them.	Forest dependent peoples.
July and August – Regional level multi-stakeholder workshops in 4 different regions. (Amhara Region, Oromia Region, Southern Region, Tigray Region)	To raise awareness on REDD+ and on the form and function of the R-PP document. To verify underlying drivers of deforestation according to the view points of different local stakeholders and to harness lessons with regards to past and existing forestry strategies including from REDD+ pilots.	Multi-stakeholder group representing key local stakeholders.

Consultation approach	Purpose	Who involved
Radio and TV Programme	to inform and get feedback from interested bodies and the general public	Media and audiences

Next steps on consultation process before presentation of R-PP.

Further awareness raising activities on REDD+ and triangulation of findings to date through further consultations at regional and community level will take place before R-PP presentation to triangulate findings and build broader ownership over the R-PP. However it must be noted that consultations will continue throughout R-PP implementation and it is expected that as awareness is raised and expectations become more realistic for REDD+ that there will be less bias in some of the findings.

Coming consultations will be taken into account in developing the draft REDD strategy of Ethiopia by June 2011, and will later feed into the process of continuous improvement of this draft strategy until end 2013

The main insights gleaned from the consultations in the development of this R-PP are:

- Excessively high expectations exist that REDD activities will solve all issues related to Forest Degradation and Deforestation while enhancing capacity to eliminate poverty.
- High expectations also exist that REDD will provide a diversity of material resources and monetary funds to government and communities in Ethiopia
- The majority of professional stakeholders see REDD+ as more effective than Sustainable Forest Management (SFM) in supporting forest protection, whereas forest-dependent people have mixed feelings. On one hand REDD+ can provide material benefits but that on the other it might threaten their forest-based livelihoods.
- There is disagreement among professionals and forest-dependent communities on what they perceive as the underlying drivers of deforestation. Professionals referred to a lack of strong forestry institutions and the poverty of forest-dependent people as root causes of forest degradation, while forest dependent communities cited unclear user rights, lack of support, motivation and reward/penalty leading to an 'open access' mentality as the key driver of forest deforestation.
- Moves towards devolution of forest management through PFM initiatives were highlighted as one of the most promising approaches to address degradation and deforestation, through the clarification and strengthening of local user rights. This increases the value of the forest to local people, creates ownership and reduces the rate of deforestation.
- Participants stressed the importance of a good stakeholder analysis conducted at all levels, so that no group (e.g. women, youth, persons with disability and the elderly) is excluded from the REDD+ decision making process.
- A group of participants' stresses piloting should focus on areas with high ecosystem services benefits (in this case carbon and biodiversity) and areas of high risks of deforestation and degradation. Other participants stressed rather than starting new REDD+ pilots at great cost during the R-PP implementation it was suggested it would be more efficient to focus on supporting existing pilot schemes, and ensuring that their lessons are fed into the REDD strategy development.

- Although it was acknowledged that there had been more participation in forestry decision-making at local level through programmes such as Participatory Forest Management it was also recognised that high-level forestry decision-making is still relatively exclusive, and participation of forest-dependent people and the private forestry sector in particular is currently insufficient at this level. More effort is needed to make policy processes more inclusive.
- **Participatory methods build ownership.** It was noted during the consultation workshops that the extensive use of participatory methods built ownership over both the process and the outcome, this R-PP. These methods will continually be improved to keep the momentum going so that ownership over the R-PP and its implementation grows.

The most common recommendations from stakeholders in terms of focus areas for REDD+ strategy development were:

1. REDD+ related awareness raising and capacity building – this includes ensuring expectations are realistic and that it is clear that REDD+ is supportive of local user rights and SFM rights and practices. It also includes extensive capacity-building for all aspects of REDD+ implementation.
2. Strengthening/developing institutions both at the federal and regional levels related to forest management and also specifically for REDD+. Currently there is no dedicated Government forestry institution in Ethiopia, and it was suggested that support during the REDD+ strategy development phase could feed into ongoing processes to develop such an institution. It was also suggested that a service- oriented rather than solely regulatory-focused forest institution is required. As well as this, various REDD+ specific institutional arrangement will have to be defined in order to deal with issues related cash flows, and MRV of carbon stocks, etc.
3. Enhancing stakeholder participation at all levels in REDD+/Forestry decision making. It became very clear during the consultation process that stakeholders wanted to be involved in both REDD+ strategy development and REDD+ implementation on an ongoing basis. Stakeholders also highlighted the importance of comprehensive institutional participation in the REDD+ decision-making during the implementation of the R-PP.
4. Participatory policy revision support. There was a lot of debate during the consultations about whether existing policies merely needed greater support, or whether they in fact needed to be revised in order to provide clearer incentives for forest-dependent communities to invest in forest management. It was clear that a large number of attendees felt that some targeted enhancements and additions would be required during the R-PP implementation phase if existing policies were to provide a more solid foundation for REDD+ implementation.
5. Support the implementation of existing ‘good’ policies. It was also recognised during the consultations that partly because of the lack of a dedicated forestry institution, many of the existing policies had not been sufficiently implemented and tested on the ground, and there were strong arguments that support for implementation of existing policies should also be a priority during R-PP implementation. The other strong view was that prior to testing the existing "good policies", the adequacy of the said policies in providing reward/penalty, motivation and support to enhance sustainable

forest management and thus economic, social and ecosystem services of forests has to be evaluated and decided upon subsequently.

Background and Rationale for the Consultation and Participation plan

The growing trend for adopting participatory forestry approaches is a response to the limitations of the centralised and top-down forestry approaches. Forestry has many economic, social and environmental impacts, which affect many people in many different ways. Yet decision-making on forestry issues has tended to be a relatively exclusive affair. Over recent decades, participatory approaches to forestry have been evolving in many parts of the world, through increased local responsibility for forest resources, improved local rights, increased bargaining power for local actors at the national level and multi-stakeholder policy reform as more actors come to the negotiating table (Mayers, 2003).

The FCPF's approach to REDD+ readiness has been built upon this evolution and thus has participation as a core cross-cutting theme – specifically ensuring that the perspectives of the most affected stakeholder's (e.g. forest dependent peoples) are given particular consideration in the decision-making process.

Definitions

Participation:

Participation covers a broad spectrum of different degrees of involvement in decision-making or action. These degrees range from consultation to involving people as key decision-makers and actors.

Stakeholder:

A stakeholder is any individual, social group or institution that is affected by or has influence on decision making. Stakeholders may or may not be formally organised.

Box 1. Stakeholder participation definitions (FAO, 2009)

The Stakeholder Consultation and Participation Plan aims to incorporate the voices and insights of forest-dependent people into the strategic REDD+ decision-making process; thereby avoiding REDD+ implementation based solely on the assumptions of professionals. This input from forest-dependent people is critical to the success of REDD+. REDD+ success means incentives to manage and protect the forest must outweigh the disincentives. It requires a good participatory approach to ensure that perceptions on the balance between incentives and disincentives are properly understood, and that the challenges to this balance and strategies to address them are identified. Incorporation of insights from forest-dependent people in decision-making will help to ensure a 'do no harm' approach to REDD+ is followed.

Apart from the analytical opportunities garnered from the consultation Plan there are also a whole range of other benefits that can be derived from an effective REDD+ consultation and participation process:

Example benefits of stakeholder participation in REDD+ strategy development (adapted from FAO, 2009)

1. **More relevant, effective and coherent strategies:** considering the views and interests of all forestry stakeholders (including those in other affected sectors such as agriculture) helps develop rounded REDD+ strategies; fresh ideas and more relevant outcomes emerge when a wide range of perspectives are considered, particularly those of local forest users
2. **Enhanced ownership of REDD+ strategies:** institutions and individuals represented in the REDD+ strategy development process are more likely to implement the resulting strategies because of an increased feeling of ownership over the strategies; participatory strategy development may take more effort than centralized decision-making, but it results in more effective and acceptable strategies, making it a more cost-effective process in the long term
3. **Increased accountability:** when forestry decision-makers engage more with people affected by forestry they tend to become more accountable and aware of the consequences of their decisions, and thus make better informed decisions
4. **Reduced conflicts through improved relationships:** relationships among stakeholders in REDD+ strategy development have been and will be improved through increased understanding, trust and confidence; a participatory REDD+ strategy development process provides opportunities for constructive confrontation, for expressing grievances and dealing with them, and for avoiding misunderstandings that can lead to conflict
5. **A raised profile and greater support for forestry:** a participatory REDD+ strategy development process creates a more effective and accountable forest sector with more positive environmental, social and economic outcomes, and all of these positive results help increase the opportunities for support and investments in forestry

Participation and power – the importance of stakeholder mapping

The essential first step in the consultation and participation process is to understand and analyse the power dynamics among forestry stakeholders in Ethiopia. The stakeholder analysis matrix (see Figure 9) is a useful framework for assessing the impacts of REDD+ decisions on both stakeholders and on stakeholders' sphere of power/influence. A description of how to conduct this consultation approach in practice is contained in Annex 1-b.

A stakeholder's position in the matrix is plotted according to their level of power/influence, and the degree by which they are potentially affected by REDD+ decisions. The matrix is a useful step in ascertaining the current status and desired status of participating stakeholders (see Table 5). Table 5 provides a narrative description of how Ethiopian forestry stakeholders were mapped in such an exercise during the consultations for the development of this R-PP. The table outlines what was perceived as the current influence/exposure position of each key forestry stakeholder, and the desired position at the end of the R-PP implementation phase.

Based on this matrix (Annex 1b), participatory strategies and approaches have been developed to bring stakeholders in part B into part A (making them more influential on REDD+ decisions), and to bring stakeholders in part C into part A (making them more accountable for/affected by REDD+ decisions). A full list of potential approaches to changing the influence/accountability of stakeholders is contained in the Annex 1-b.

As can be seen in Figure 9, it is clear that specific stakeholders require specific targeted actions to ensure that they are in a suitable position of power and accountability before

the REDD+ implementation phase begins. The consultation and participation plan is designed to provide the mechanisms to create such movements.

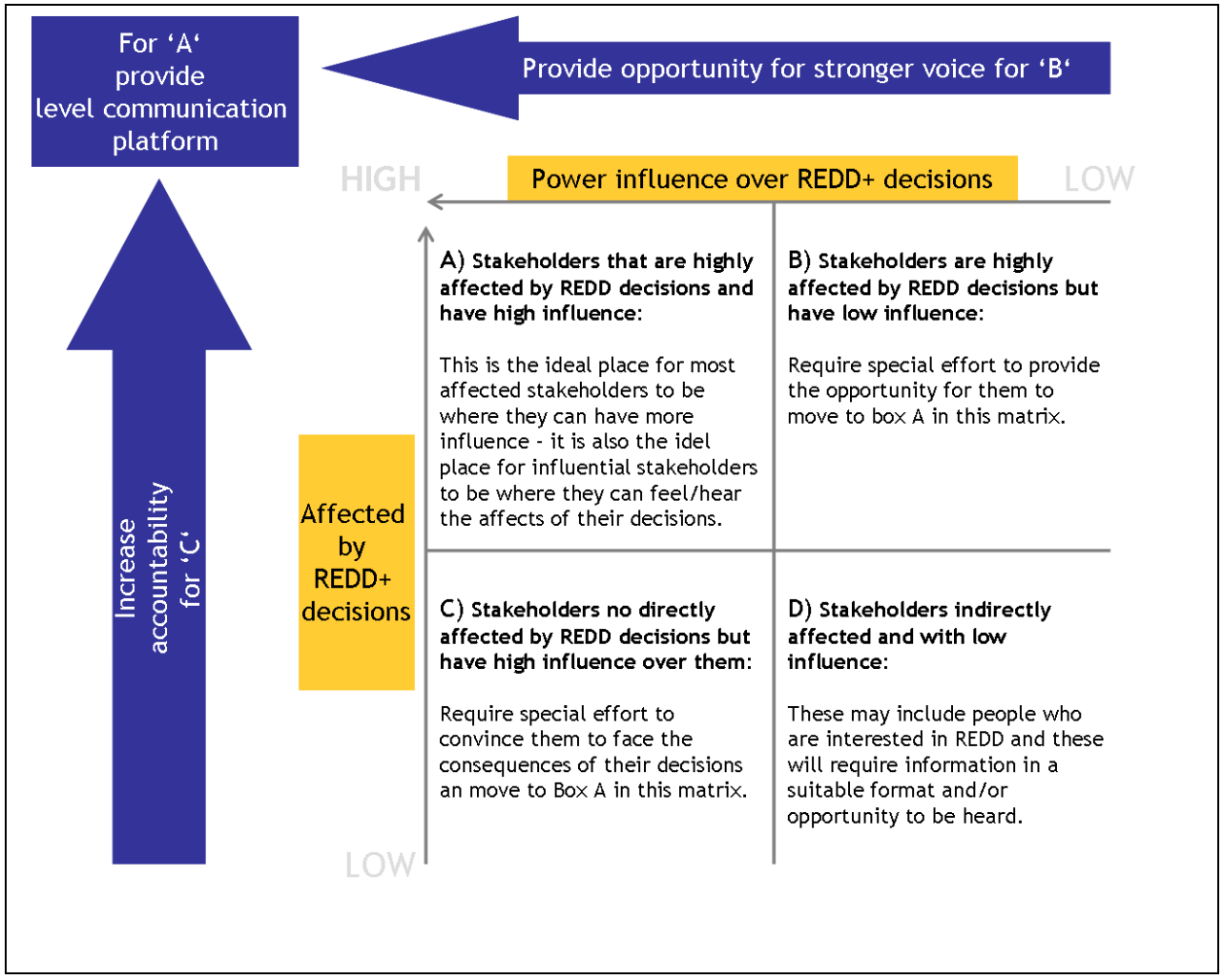


Figure 9: Framework for categorizing forestry stakeholders (Adapted from FAO, 2009)

Note that the results (Table 5) are tentative and the exercise will be repeated during the R-PP implementation phase with a wider range of stakeholders.

Table 5 Forest stakeholders

Forest stakeholders	Current status	Desired status at end of REDD strategy development
1. Forest dwellers	Highly affected by forestry decisions, low formal influence on high level policy decisions, but high informal influence on local forest management	As the most affected party they must aim to become the most influential stakeholder over REDD+ planning and implementation

Forest stakeholders	Current status	Desired status at end of REDD strategy development
2. Private forestry sector– wood enterprises (small scale)	Highly affected by forestry, but with the least influence over forestry decisions out of all the key forestry stakeholders; currently many wood based enterprises operate informally, outside or on the fringes of the law, and are thus also not accountable	Must have its influence increased so that it is brought into a decision-making role in REDD+ and its accountability increases through more formalisation and oversight. Formalisation could ensure more control and efficient use of wood through better training etc. whilst helping to increase the tangible value of forest products for communities by paying fairer legal prices.
3. Private forestry sector – non wood enterprises (small scale and large scale).	Many non wood enterprises, notably related to honey and coffee have a high effect on forestry, with coffee and honey (for Tej) honey wine)) providing extra incentives to maintain trees (for shade and hanging hives).	These NTFP enterprises play key roles in providing incentives for communities to maintain forest and tree cover. It will be essential that REDD+ builds into these incentives and ensures positive impacts on the forest and forest users are increased and negative impacts decreased.
4. Non forest dwellers (rural)	Highly affected (not as much as forest dwellers), because they often rely on forest and tree products; currently lower influence than forest dwellers on forestry decision making	Should not be forgotten as a stakeholder (not only focus on forest dwellers); it is suggested that behind forest dwellers they should have the second highest influence
5. Non forest dwellers (urban)	Moderately highly affected, because they also rely on forest products for cooking, construction etc. but currently one of the least influential stakeholders	Better links must be established between these buyers of forest products and other forestry stakeholders; increasing prices of forest products due to any REDD+ supported restrictions on forest use will be felt by this stakeholder group, so they should have a voice
6. Civil society organisations – non government organisations etc.	Varies from organisation to organisation. Those that work closely with forest dependent stakeholders are often quite accountable to the forest communities, and some NGOs along with supporting development partners are influential on forestry decision making.	Should increasingly play facilitation role to increase the voices of stakeholders 1 – 4, but in terms of their own influence it should not increase too much. Some NGOs that will be involved in REDD+ support should become even more accountable to community members engaged in these pilots.

Forest stakeholders	Current status	Desired status at end of REDD strategy development
7. Ministry of Agriculture (at different levels)	Has the highest influence on forestry decisions as it is the ministry that is responsible for forestry, although currently there is no forestry department within the MoA, which limits the coherence of its influence.	Should increase engagement with local level forest stakeholders before REDD+ implementation and examine more partnership and benefit sharing opportunities with local stakeholders.
8. Environmental Protection Authority	Considered the most influential public agency on setting environmental regulatory systems, capacity building, and monitoring and effectiveness evaluation in relation to environmental matters, including forestry. It could also be better connected through regional EPAs for a better engagement with local stakeholders and local level practice. Some consider it to be more influential on environmental policy rather than forestry policies and practice.	Should ensure the integration of REDD+ issues at the policy and project level prior to the approval of a public document and issuance of a permit to operate Should actively try to engage more local level forestry stakeholders as well as actively engage more with the MoA, MoCT and EWCA when it comes to REDD+ related forestry decision making. Was suggested that it may be able to play a strong monitoring role during REDD+ implementation if a forestry institution is developed that can handle REDD+ implementation. Should provide recommendation to the Environmental Council to play a role in strengthening a forestry focus and in developing a service oriented forestry institution at the federal and regional levels; as appropriate. Should also increase engagement of stakeholders in higher level decision-making before the REDD+ implementation phase.
9. Ethiopian Wildlife Conservation Authority	One of the most highly influential government bodies on forestry, particularly related to protected areas; needs to improve its engagement with local level forest stakeholders although some promising examples of cooperation with local stakeholders emerging.	Should increase engagement with local level forest stakeholders before REDD+ implementation and examine more partnership and benefit sharing opportunities with local stakeholders.
10. Investment	This stakeholder has high	Should not have any more influence

Forest stakeholders	Current status	Desired status at end of REDD strategy development
Authority (at different levels)	indirect influence on forestry as investments have led to forest clearance; it does not have strong links with MoA and FEPA and needs to be more accountable to forest stakeholders	than it has now but needs to work more closely with other ministries/authorities(notably MoA and FEPA) and be more accountable to local level stakeholders
11. Ministry of Mines and Energy	This Ministry currently has a moderate effect on forestry decisions; it is geared more to appeasing national priorities rather than the concerns of some local stakeholders	Its influence level should not increase but it should become more accountable to local stakeholders in order to better balance local and national priorities.
12. Ministry of Water Resources	Water resources are very affected by forestry decisions; this ministry currently does not have strong influence over forestry decisions or connections with local level forestry stakeholders	Should increase both its power/influence and accountability on forestry decisions by interacting more with local stakeholders and by developing more partnerships with local stakeholders (e.g. through Payments for Environmental Services (Watershed protection) schemes).
13. Research Institutes and Universities	Currently a moderate amount of influence and not as engaged with local forest stakeholders as they should be	Must increase interaction with forest-dependent stakeholders so that their activities are more relevant to the issues raised by forest dependent people; should increase their power by working more directly with government ministries. To get ready for REDD+ implementation must adopt a critical research focus on REDD+ and develop more curricula related to REDD+. Create a network of research institutions and forest stakeholders to meet regularly, at least once a year, and to combine that with field visits
14. Ethiopian Tele-communications Corporation	Quite highly affected as it needs poles from trees as raw material; very low influence	Should have greater influence but also more accountability for the use of wood
15. Ethiopian Road	Locally can have major	Accountability should increase and

Forest stakeholders	Current status	Desired status at end of REDD strategy development
Authority	impact on forests through clearing to build roads and also through increasing access to the forest; powerful stakeholder but not much engaged with other forestry stakeholders	influence should decrease. It should coordinate more closely with the MoA and FEPA

Objectives of the stakeholder consultation and participation plan

1. Develop effective communication mechanisms on all aspects pertinent to REDD+ strategy development in cost effective and innovative ways, in order to ensure concerned stakeholders receive the type of information they need in appropriate formats.
2. Develop effective mechanisms to engage stakeholders in REDD+ strategy development and ensure the most affected stakeholders are given a strong voice and that the most influential are accountable for their decisions.

Methods for the stakeholder consultation and participation plan

Table 6 highlights specific consultation and participation methods suitable for specific R-PP components. Note that the methods are used in slightly different ways for each component. More details on the methods are contained in the Annex 1-b. All of the following methods have been successfully tried and tested with various forestry stakeholders in Ethiopia and in Participatory Forestry Management Projects and have been adapted for use in REDD+ initiatives.

Table 6 Consultation and participation methods to be used in R-PP component development and implementation (tool numbers refer to Annex 1-b.)

Component	Consultation and participation methods tool box.
1a. National readiness management arrangements	• Stakeholder mapping and analysis (Tool 1): identify who are the key forest stakeholders, and ensure appropriate representation in various REDD+ national management groups (e.g. RSC and RTWG) • Visioning (Tool 2): build understanding and assess expectations of REDD+ among the group members. • Strengths, weaknesses, recommendations (SWR) analysis (Tool 8): ideal for doing a critical review of the groups (SW) and identify ways (R) to reform and improve the form and function of the groups • Fishbowl debate (Tool 11): good to constructively and openly deal with differences of opinion in the groups or in the forums; provides a level communication platform for the powerful and less powerful
1b. Stakeholder consultation and	All tools in the toolbox should be used for stakeholder consultation and participation, however the following are described as ways of

Component	Consultation and participation methods tool box.
participation	using tools for specific consultation and participation purposes: • Stakeholder Mapping and Analysis (Tool 1): a second mapping and analysis should be done by the RRTWGs to identify in more detail who should be consulted and participate in each region • Visioning (Tool 2): can be used as a needs assessment method at beginning of capacity building exercises geared at developing skills in consultation and participation, by asking for visions of 'what is 'good participation'? • Time/trend line (Tool 3): can be used as an awareness tool on the benefits of participation by highlighting trends over the years with regards to participation and deforestation in Ethiopia, highlighting that recent participation has slowed deforestation in some areas • Problem analysis (Tool 5) and Solution Analysis (Tool 6): can be used as educational/analytical tools to probe deeply and raise awareness on root drivers of deforestation and develop strategies to address them • Posters and leaflets with visualisations/in local languages can be effective especially to raise awareness on what would otherwise be un-engaging documents such as policies; if interaction is encouraged the effectiveness of posters can be increased e.g., by using Tool 10: poster with post-its (tool has been used effectively to communicate and review forest policies in Ethiopia using posters) Television and radio: very effective way of communicating message, but one has to be very careful on the development of the message (see also action plan in Table 7) • Road shows with dramas, quizzes etc. are an excellent interactive way to engage with stakeholders.
2a. Assessment of land use, forest policy and governance	• Stakeholder analysis (Tool 1): to assess governance issues and power mapping of stakeholders, in order to ascertain the balance between the influence of forestry stakeholders and the impacts upon them. • Time/trend line (Tool 3): to assess historical land use issues against events, for example how changes in policy affected land use • Problem analysis (Tool 5): to look and delve into the perceived drivers and underlying drivers (often related to policy) of deforestation and degradation • Solution analysis (Tool 6): to explore strategies to address the drivers and underlying drivers • Strengths, weaknesses, recommendations (SWR) analysis (Tool 8): to assess past and present forest projects, programmes, laws and policies, learn lessons and build on the lessons to develop appropriate and grounded REDD+ strategies • 3Rs ranking (Rights, Responsibilities and Revenues in forest management) (Tool 8): ideal way to assess social justice in the forest sector – balance between burdens (responsibilities), rights and benefits (revenues) from the forest for local people; a good baseline captured before REDD+ support is introduced can then be revisited

Component	Consultation and participation methods tool box.
	at a later stage to see if the balance between burdens and benefits is changing • Fishbowl debate (Tool 11): excellent way to conduct multi-stakeholder debate when there are differences of opinion, providing an opportunity for the less powerful to debate on a level communication playing field with the more powerful
2b. REDD+ strategy options	These should lead on from the outputs of tools used in 2a. Then: • SWR analysis (Tool 8): ideal for doing a critical review of strategy options (SW) and identifying ways to improve the options(R) • Synthesis brainstorming on strategies/solutions (Tool 4): solutions instead of problems– good way to collectively develop priority areas for strategies options • Priority ranking (Tool 7): ideal for identifying collective priority strategies and screening the strategies against various criteria so that the optimum strategy options are selected
2c. REDD implementation framework	Outputs from the various exercises in 2b should feed into 2c. Then: • SWR analysis (Tool 8) conducted with various stakeholders – ideal for doing a critical review of the institutional and enabling environment (e.g. the policy environment), and for identifying ways to reform and improve the enabling environment
2d. Social and environmental and economic impact assessment	The following tools complement the approaches described in Component 2d: • SWR (Tool 8): essential for impact assessment and lesson learning, can be used with various social and environmental criteria – to be conducted especially with the most affected stakeholders as they critically assess REDD+ pilots. • 3Rs Ranking (Tool 9): used the same way as in 2a above: an excellent way to monitor social justice in REDD+ implementation.
3. Developing a reference scenario	• Participatory inventory techniques – some have already been developed by PFM projects in Ethiopia; getting community members involved in GPS surveys etc. not only helps build ownership over the process but has been proven to lower suspicions
4. Design a monitoring system(MRV)	Consultation and participation methods can be relevant for some qualitative aspects of the MRV system: • Strengths, weaknesses, opportunities and threats (SWOT) (adapted Tool 8): essential impact assessment and lesson learning method can be used with various criteria of relevance to the MRV: • For the financial MRV, book keeping records can be placed for transparency reasons on large posters in a public location that will help especially community members monitor money flows and expenditures of REDD+ financial support.

For more details on participatory methods related to other components refer to the details of the other components in this R-PP document. It should be noted that these component-specific participation activities are also included in the respective budgets of these other components, not in this sections' budget. Significant steps that must be undertaken and funded from within Component 2b are shown in Figure 10.

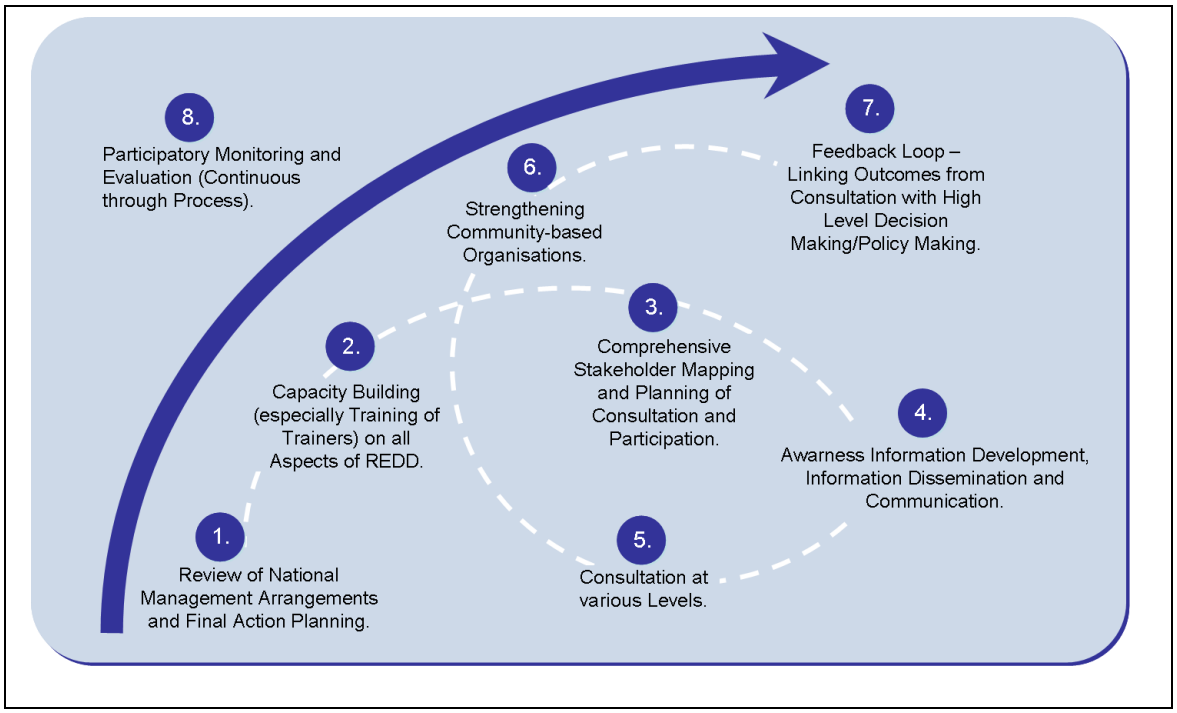


Figure 10: Key phases in the consultation and participation action plan

All of the process steps in Figure 9 are elaborated in the action plan that follows (Table 7). Elaborations of activities in the action plan are contained in the Annex 1-b.

Consultation and participation action plan

Note that the consultation and participation action plan is based on the outcomes of various consultations during the development of the R-PP as documented in Table 7.

Consultation and participation action plan

Table 7 Stakeholder consultation and participation plan (proposed actions)

Gap / Challenge Analysis	Proposed process to implement stakeholder consultation and participation plan					
	What action	**Target**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
Steering committee and Technical working groups may not currently be optimal in terms of forest stakeholder representation No steering groups for REDD+ at regional level, so difficult to reach out to local stakeholders Action plan and roles and responsibilities to implement the	**Action 1.: Reviewing composition and structure of national management arrangements:** **a) as a result of the review (if necessary) develop a more representative multi-stakeholder steering committee and technical working group** **b) establish a representative multi-stakeholder steering committee for REDD+ strategy development and**	• Existing members of the RSC and RTWG and new potential members from relevant, influential and affected stakeholder groups • Identify suitable stakeholder representatives at regional level – including community and private sector representation. • Driven by Technical Working Group but possibly supported /facilitated by a suitable NGO	• RSC and RTWG review workshop immediately after/before finalisation of R-PP • Hold multi-stakeholder forums at regional level with good stakeholder representation – identify roles and responsibilities and then have election for suitable RRTWG members • prepare recommendations to be submitted to the Environmental Council	• Enhanced RSC and RTWG matched to the needs of the R-PP implementation phase i.e. with appropriate stakeholder representation in RRTWG • Multi-stakeholder regional RSCs • Final action plan for R-PP implementation with targets, roles and responsibilities for components of the RTWG and various RRTWGs and sub groups	• Comprehensiveness of stakeholder representation at the RSC and RTWG/ regional RSCs • Number of sectoral and regional institutions represented at the RSC and RTWG/ regional RSCs • Level of sectoral and regional representatives in the RSC and RTWG/ regional RSCs • Legal status of RSC and RTWG/ regional RSCs • Amount and sustainability of budget for the operationalizsation of RSC and RTWG/	Within 2010/early 2011

Gap / Challenge Analysis		Proposed process to implement stakeholder consultation and participation plan				
	What action	Target	Method	Outcomes	M&E key indicators	Timing
R-PP document need to be fine tuned when the R-PP is approved	**implementation at regional levels (if not done so during R-PP development phase)**			• Good representative mix of stakeholders on the various groups e.g. 50% representation of women	regional RSCs • Feasibility of intended actions (compared to requirements of budget, personnel etc.) • Clarity of road map • Logical sequencing of intended actions • Sufficiency to meet sustainability requirements • Comprehensiveness of actions to meet intended targets • Percentage of women, youth group and elderly represented	
There is insufficient capacity in Ethiopia to meet training needs on	**Action 2.: Capacity building (training of trainers) on various topics**	• International consultant experts on REDD+ in partnership with consultants and	• Preparation of training modules and Short 'train the trainers' courses on topics relevant	• Skill base in the country relevant to training and awareness on REDD+	• Number and quality of trainings on REDD+ (including workshops, conferences, tailor made trainings)	2011

Gap / Challenge Analysis	Proposed process to implement stakeholder consultation and participation plan					
	What action	Target	Method	Outcomes	M&E key indicators	Timing
various REDD+ related topics	**relevant to REDD+** **(the topics can be divided according to the various components in the R-PP)**	a specified[5] group of experienced institutions could provide or support the capacity building. • The initial targets for the training will be the RTWG, RRTWG and key NGOS supporting REDD+ pilots. Forestry training institutions such as Wondogenet forestry college will also be targeted	to R-PP implementation and development, to be held within months of approval of R-PP • After these 'train the trainer' courses further training courses will be held to 'cascade' the training to all targeted groups – see the individual R-PP components for more details	• Other R-PP components capacity building related activities can be rolled out with a trained group of trainers.	• Number and quality of Community awareness on REDD+ • Number and quality of ToTs	
During the R-PP	**Action 3.: Comprehensive**	• The stakeholder	• Stakeholder mapping and	• Detailed plans for in-	• Quality and adequacy of prepared plans	2010 and early 1011

[5] EWCA, Forestry Research Center of the EIAR, Bahir Dar University, Mekele University, Arba Minch University, Ambo University, National Meteorology Agency, Addis Ababa University, Haramaya University, Jimma University, Hwassa University (Wondogenet Forestry College); Overseas Universities and study Centres such as Wageningen University, ITC, GTZ Adaba-Dodola, GTZ Ethiopia, CIFOR; EPA; various NGOs: ISD, REST, ORDA and other equivalent regional organizations, Farm Africa-SOS Sahel, NTFP-PFM Project, World Vision (Humbo), JICA (Belete Forest), World Bank FCPF, FAO, ADB, EC and EDF

Gap / Challenge Analysis	Proposed process to implement stakeholder consultation and participation plan					
	What action	Target	Method	Outcomes	M&E key indicators	Timing
development phase only a tentative stakeholder mapping and analysis was conducted Likewise detailed plans for formal incorporation of the stakeholder consultation and participation process have to be drawn up	**stakeholder mapping and planning of detailed consultations and participation**	mapping and analysis should be conducted by the RRTWGs at regional level. • The development of a detailed consultation and participation plan catered to the specifics of each region should be undertaken	analysis method (see Tool 1) should be used along with an action planning exercise	depth stakeholder consultation and participation including details on the 'Who' (stakeholder), 'What' (purpose), 'How' (methods) and 'When'(timing)	• Level of stakeholder identification in the plans	
Lack of communication and suitable materials to demonstrate what REDD+ is , how it works, and which organization	**Action 4.: Awareness raising and information development, dissemination and communication :** **Raise**	• Consultants (partnerships between international and national), research institutions and NGOs– contribute relevant content	• Materials can be developed through a write shops methodology that harnesses lessons from REDD+ practice in Ethiopia and internationally,	• Full set of user friendly REDD+ awareness materials in local languages with visualisations etc. disseminated	• Quality of awareness materials prepared • Number of community languages used • No. of materials disseminated to the stakeholders • Kind and No. of media	2011 - 2013

Gap / Challenge Analysis		Proposed process to implement stakeholder consultation and participation plan				
	What action	Target	Method	Outcomes	M&E key indicators	Timing
supports it.	**awareness on the rationale, principles and mechanisms for REDD+, ensuring expectations are informed and realistic etc.** **Promote the capacity of the REDD+ organization to coordinate REDD+ activities and involve local communities.**	• RRTWGs responsible for dissemination of materials to the stakeholders identified in **Action 3**	• Various media to be used to disseminate information – meetings, illustrated posters, newspaper, radio and television materials • Establish REDD+ partnerships (international), exchange contents and methods (e.g. will contact Mexico on MRV developments)	and explained to targeted stakeholders via a comprehensive set of media.	used	
Insufficient mechanisms for forest-dependent people and stakeholders affected by REDD+ pilots to meet	**Action 5.: Consultations at various levels** **Multi-stakeholder forums held at regional and federal level to**	• Facilitated by TWGs with support by NGOS – targeting all the most affected stakeholders as well as influential	• Field trips to REDD+ pilots • Multi-stakeholder forums bringing decision makers face to face with forest	• Informed and accountable decision makers and empowered forest-dependent people leading to REDD+	• No. of informed forest dependent people leading to REDD+ implementation	2010-2013

Gap / Challenge Analysis		Proposed process to implement stakeholder consultation and participation plan				
	What action	Target	Method	Outcomes	M&E key indicators	Timing
decision makers face to face	**critically review REDD+ pilot experiences as well as other forestry related issues – by hearing analysis directly from forest-dependent people and enabling engagement with influential stakeholders**	stakeholders; primarily forest stakeholders directly affected by REDD+ pilot, other forest dependent peoples and senior decision makers at Regional and Federal level as well as RTWGS, RSC • Build on existing democratic mechanisms where interactions can take place e.g., forest dependent people can be brought for face to face meetings with politicians in the house of representatives	dependent community members • Participatory methodologies in the forums (see component 1b) ensure a level communication playing field and a thorough, analytical, review (grievance and conflict resolution mechanisms will be part of these consultations) • Radio and TV programmes giving forest-dependent people a voice	implementation being effective and accountable.		

Gap / Challenge Analysis		Proposed process to implement stakeholder consultation and participation plan				
	What action	**Target**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
		in a special session on REDD+.				
Insufficient organisation of community groups who can provide a voice for forest-dependent communities and other communities affected by REDD+ pilots	**Action 6.: Strengthening forestry-related community based organisations and links between them and REDD+ decision making bodies**	• local administrations, local community organization, NGOs and consultants coordinated by the RRTWGs	• Reviewing existing relevant community based organisations, or forming new ones at REDD+ pilot areas. Building their capacity in analysis (participatory methods like problem analysis) and public speaking through training and exposure to various workshops. Inviting community organisations to send representatives to RRTWG and other groups and forums	• Relevant community based organisations strengthened, capacity in terms of analytical skills and presentation skills built Representation of community members on REDD+ bodies and forums increased.	• No. of community organizations strengthened • No. of community members represented	2010-2013

Gap / Challenge Analysis		Proposed process to implement stakeholder consultation and participation plan				
	What action	**Target**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
Need for community concerns, voice and local realities to reach policy making processes.	**Action 7.: Feedback loop – linking outcomes from consultations with high level decision makers and policy making processes**	• Representatives of forest-dependent people and senior decision makers • The RSC can help organise	• Participatory methods can be used in face to face forums • Forest-dependent people can be invited to take part in any existing policy process using participatory methods to ensure maximum engagement	• Policy positively influenced by forest-dependent peoples	• No. of policies amended with FDP participation • No. of legal documents issued to implement policies with FDP participation • No. of FDP invited to policy/legislation formulation/amendment process	2010-2013
Need to ensure quality in the participation and consultation processes are maintained	**Action 8.: Participatory monitoring and evaluation (continuous throughout)**	• Best facilitated by a third party – for example an NGO who does assessments with stakeholders gauge their perceptions on the quality of the participation	• Participatory methods can be used to assess quality and get ideas to improve e.g., SWR method (Tool 8) • Care must be taken to provide an environment where stakeholders	• Quality of participation and consultations continually assessed and feedback to improve the process	• No. Of assessments undertaken • No. Of feedbacks solicited for improvement	2010-2013

Gap / Challenge Analysis		Proposed process to implement stakeholder consultation and participation plan				
	What action	Target	Method	Outcomes	M&E key indicators	Timing
		and consultation process is • Can be conducted after the various meetings etc. with forest stakeholders	feel comfortable to state their views – anonymity can be guaranteed			

Budget

Table 8 Stakeholder Consultation and Participation budget

Summary of Stakeholder Consultation and Participation **Budget**					
Main Activities	**Estimated Cost (in thousands USD)**				
	2011	**2012**	**2013**	**2014**	**Total**
1. Review of national management arrangements and final action plan	5	5	-	-	**10**
2. Capacity building ('Train the Trainers) on various aspects of REDD+	150	200	50	-	**400**
3. Comprehensive stakeholder mapping and planning of consultation and participation.	30	-	-	-	**30**
4. Awareness raising and information development, dissemination and communication	70	70	30	20	**190**
5. Consultations at various levels	120	180	90	20	**410**
6. Strengthening community-based organisations	160	160	70	30	**420**
7. Feedback loop – linking outcomes from consultation with high level decision making/policy making	80	80	50	-	**210**
8. Participatory Monitoring and Evaluation	80	120	40	10	**250**
Total	**695**	**815**	**330**	**80**	**1920**
Government	150	200	45	10	405
FCPF	135	200	80	20	435
UN-REDD Programme	110	180	80	20	390
Nordic Climate Facility-NCF	200	170	95	20	485
French Development Agency-AFD	100	65	30	10	205

Component 2: Prepare the REDD Strategy

Figure 11 below lays out a roadmap for the REDD+ strategy preparation process (Component 2), and shows how components 2a, 2b, 2c and 2d are interconnected. Assessments (of land use practices, forest governance etc.) will inform the development of REDD+ strategy options, and in turn both the assessments and the strategy options will inform the development of institutional arrangements – thus linking local experiences and national frameworks. Actions to help develop the social and environmental impact assessment mechanism in step '2d' will also be integrated into 2a, 2b and 2c. The underlying application of the consultation and participation plan will also run through all four stages of the process.

This section lays out the steps to develop a draft REDD strategy for Ethiopia in 2011 and start a process of continuous improvement until a final strategy is agreed, by end 2013.

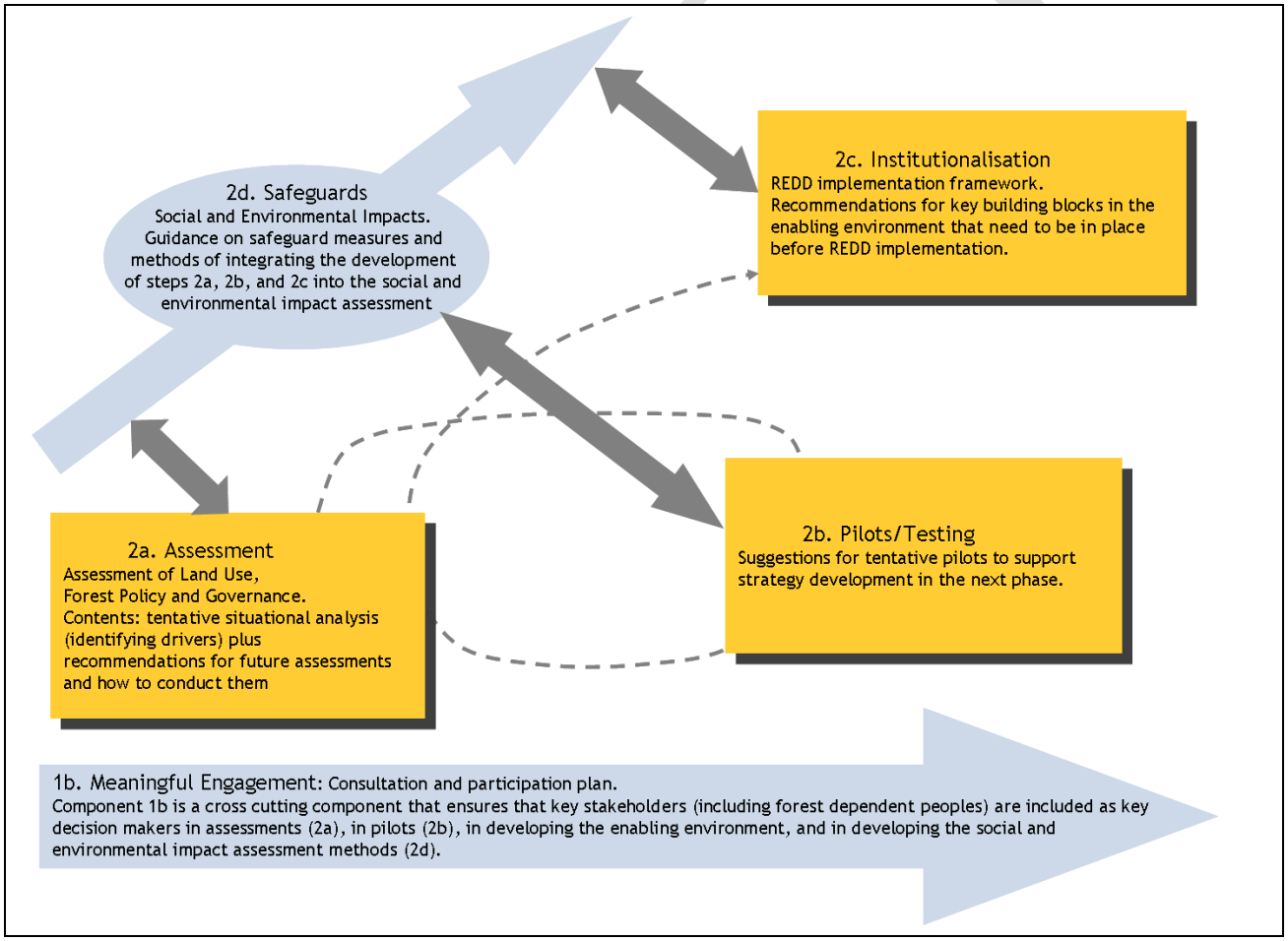


Figure 11: Process roadmap for REDD strategy development showing linkage between sub components 2a, b, c and d as well as links to 1b

2a. Assessment of Land Use, Forest Policy and Governance

This sub-component provides a summary assessment of the land use, policy and governance situation relevant to deforestation and forest degradation. It also provides a tentative analysis of the underlying drivers of deforestation and degradation, and identifies knowledge gaps. It then outlines the assessment approach to be used to address these gaps, and identifies who should be involved in conducting these assessments.

Figure 12: Component 2a in the REDD readiness wheel

Types of vegetation in Ethiopia and main sources

Nine natural vegetation types are distinguished in Ethiopia (Sebsebe, 1996; CSE, 1997; Zerihun, 2000 in Lemenih and Woldemarian, 2010 forthcoming): (1) dry evergreen Afromontane vegetation, (2) Combretum–Terminalia (broad-leaved) deciduous woodland, (3) Acacia–Commiphora (small-leaved) deciduous woodland, (4) lowland dry forests, (5) lowland semi-desert and desert vegetation, (6) evergreen scrub, (7) wetland (swamps, lakes, rivers and riparian) vegetation, (8) moist evergreen montane forest, and (9) Afroalpine and sub-Afroalpine vegetation. Ethiopia's forest resources (both natural and plantation) supply most of the wood products used within the country, as well as a large volume of diverse non-timber forest products (NTFPs). Examples of the most important NTFPs are forest coffee, gum and incense, honey, spices, wax and herbal medicines etc. (Lemenih and Tadesse, 2010; Lemenih, 2008; Mender et al, 2006). Forests/woodland and their products occupy key positions in the country's economy (Teketay *et al.*, 2010), although due to the informality of many forest uses, the contribution is often not taken into consideration in Gross Domestic Product calculations. For example, fodder derived from forested areas provides 10 - 60 % of livestock feed in the wet and dry seasons, respectively (Lemenih, 2008).

A key source of forest-related land use information is the World Bank-funded Woody Biomass Inventory and Strategic Planning Project (WBISPP, 2004; cited in R-PIN 2008), which mapped 14 classes of land use, including forests (South-West Ethiopia is mapped on the basis of satellite images taken from around 1990; the rest of the country is based on images from around 2000). The project also estimated woody biomass volumes through forest inventories. Annex 2a-1 provides a significant amount of data relating to forest-based land-use, including: an overview of national and international definitions for forest classification and assessments; a comparison of forest resource statistics 1994-2005; the latest FAO forest resources estimates 2010; estimated land cover 2005 as projected by the WBISPP report and background information on definitions of vegetation and forest types.

WBISPP 2004 data includes regional figures for the national forest classification. According to WBISPP in 2005 Ethiopia had a total of 3.3 million hectares covered by forest (national definition), 9.6m ha of high wood land (national definition), 0.5m ha of plantations (national definition) and 44.6m ha of other wooded land (FAO definition). In terms of the regional distribution of natural high forest the Oromia, Southern Nations, Nationalities and Peoples (SNNP) and Gambella regions have the largest share, while the Somali, Oromia and Amhara regions share the largest woodlands and shrub- and bush lands area.

The latest forest cover figures published for Ethiopia is available from the Forest Resource Assessment by FAO (FRA, 2010) (see also Annex 2a-1). This data shows a decline in forest cover (FAO definition) from 15.11million ha in 1990 to 12.2 million ha in 2010, while cover belonging to other wooded land remained constant at 44.65m ha in the same period. FAO (2010) FRA data is based on a reclassification, calibration and linear extrapolation of data from WBISPP 2004.

In Component 3 and Component 4 the establishment of a consistent and appropriate reference scenario and monitoring system for successful REDD+ implementation is addressed.

Deforestation is quantified and analysed by various local and international authors (Dereje Tadesse, 2007; Gessesse Dessie and Kleman, 2007; Kebede Seifu, 1998; Fite Getaneh, 2008; Tekle and Hedlund, 2000; Van Muysen *et al*., 1998; Gete Zeleke and Hurni, 2001; Reusing, 1998; WBISPP, 2004). Lemenih and Woldemarian, 2010 establish an average deforestation (loss of woody biomass, based on studies covering 1972 – 2005) rate of 1.0–1.5 % percent annually. Annual clearing rates for the three most forested regions is estimated as 1.16 % in Oromiya, 2.35% in the SNNP, 1.28% in Gambella Region (WBISPP, 2004). These deforestation rates not consistent with FAO (2010) data and the regional and methodological heterogeneity of the studies make a reliable estimate difficult. By addressing the actions specified in Component 3 a consensus amongst Ethiopian experts is expected to be reached that will overcome this problem.

Assessment of forest policy and use rights

Forest ownership in Ethiopia is invested in the state on behalf of the people. Forest policy is supported by two separate mechanisms: Policy and Proclamations. The Environmental Policy of Ethiopia, the Conservation Strategy of Ethiopia and the Federal Forest Development, Conservation and Utilization Proclamation (542/2007) were developed in 2002 and 2007 respectively. The forestry proclamation recognises both private and state ownership. The Environment Policy of Ethiopia, the Conservation Strategies of Ethiopia and Federal Proclamation provide a framework which the regions can use to develop their own no-lesser stringent regional regulatory systems, which can be adapted to better fit different regional contexts. The regional states, in accordance with federal laws, have the authority to administer forest resources (forestry administration; management, selling of carbon credits) (Mellese, 2010). For example, the results of the successfully devolved forest management of PFM program in Oromia influenced the development of Oromia's Regional Proclamation, which divides forest ownership into three categories: state, private and community (basically expanding private ownership to include community ownership). New developments in forest policy and the implications on the REDD+ implementation framework are discussed further in sub component 2c. The knowledge of the impacts of forest related policy instruments and the development of land use rights in keeping with uninterrupted access to the same piece of land as pronounced by the Environmental Policy of Ethiopia is limited, and it remains undocumented how previous experiences have been integrated into later policies.

Development of the R-PP has highlighted the necessity for an assessment of the current policy environment (see Table 9) to develop successful REDD+.

Forest related institutions

The Ministry of Agriculture and Rural Development (MoA) and the Ministry of Culture and Tourism (MoCT) as well as EWCA are the institution responsible for forestry in Ethiopia. There is no clearly dedicated national forestry institution in Ethiopia. For example, at the Federal level forestry is administered under MoA's Sustainable Land and Watershed Management case team. Reportedly, (Questionnaire response for R-PP preparation, 2010) in 2009 only 10 staff were in this team and only 3 were qualified foresters. At the lower hierarchy level (i.e Woreda and Kebelle level) Agricultural and Rural Development Agents are tasked with a wide range of agricultural development activities, while limited attention is given to forestry activities (Derero et al. 2010).

Despite the recognized deficiencies in state forestry apparatus, there have been positive developments regarding the development of state-run forestry activities and business-oriented forest enterprises at regional level. Oromia Region's Forest and Wildlife Enterprise is the frontrunner in this development. This enterprise has also been designated as the lead authority in administering and selling carbon credits in this region. Amhara regional state has followed Oromia's example and also established a forest management enterprise. SNNP and Tigray regions are currently developing forest management enterprises.

Apart from state forest management instruments, various community-based forest management organisations have also been established in the last 10 years, notably the informal WAJIB (acronym in Oromifa language) forest user groups, as well as Forest Management Cooperatives and Unions. In Southern Nations another type of organisation, known as Forest Management Associations, has been established. The number of organisations is expanding as the country's Participatory Forest Management (PFM) programme is currently undergoing a major up-scaling with government funding and support from the European Development Fund (EDF). The community-based organisations hold agreements with the government granting them formal community control of the forest area as well as various use rights. There have also been various benefit-sharing mechanisms agreed between communities and the national and regional governments with regards to the proceeds from forest resources. The experiences gained via such agreements will provide a good foundation to develop REDD+ related benefit-sharing mechanisms.

Projects linked to REDD+

There are a number of REDD+ pilot projects in the country that are found at various preparatory stages. These are mainly based around PFM initiatives and participatory conservation initiatives in protected area and buffer zones. These pilots are described in more detail in Chapter 2b, under 'Strategy Options' and a list can be found in Annex 2b.

Problem analysis of the causes of deforestation and degradation in Ethiopia

- Drivers of deforestation were assessed in the Readiness Plan Idea Notes (R-PIN (2008), the WBISPP 2004 project, and for this R-PP through various means, including:
- Focus group discussions with forest-dependent peoples as part of the R-PP development process,
- R-PP national and Regional consultation workshops
- **R-PP development-related questionnaire, 2010**
- Various literature sources
- Personal communications with practitioners with years of experience of facilitating driver analysis with forest-dependent communities.
- Effort conducted by the Ethiopian Development Research Institute (EDRI) in 2010 to provide a preliminary input to the Climate Resilient Green Economy initiative, supported by the Global Green Growth Institute (GGGI)

The results of this analysis are presented below in a summary. It should be emphasised however, that the following sections offer only a generic and tentative overview of the relevant drivers, and further investigation will be required during the R-PP implementation phase (see stakeholder consultation and participation plan component 1b for a description of methods to be used for a 'deep dive' analysis). A solution analysis on how to address the causes of deforestation and forest degradation is contained in Chapter 2b, the results of which will be used to inform the strategic options that are presented later in this section.

Analysis of the impact and the underlying causes of the main drivers of deforestation and forest degradation in Ethiopia The two main drivers accounting for most of the deforestation and forest degradation in Ethiopia: Conversion to agricultural land and unsustainable fuel wood consumption. These drivers are strengthened by current demographic and economic trends, and enabled by a deficient regulatory and institutional framework for forestry.

- Conversion to agricultural land

Conversion of forests, woodland and shrub land into agricultural land is by far the largest driver of deforestation in Ethiopia, causing the emission of an estimated 40 Mt of CO2 from deforestation in 2010[6]. Its impact is bound to increase up to 65 Mt per year in 2030, as development of agriculture continues to accelerate under the impulse of strong governmental support and demographic growth

Figure 13 shows that in a 'business as usual' growth path, requirement for agricultural land will increase by 19 Mha by 2030, from 15 Mha in 2008[7], to meet booming demand. This land mostly being taken from forestry: based on historical deforestation rates as per WBISPP, 80% of new agricultural land developed between 2000 and 2008 was converted from forests, woodlands or shrub lands.

[6]Source: EDRI effort on Green Growth, 2010

[7] Source: EDRI effort on Green Growth, 2010

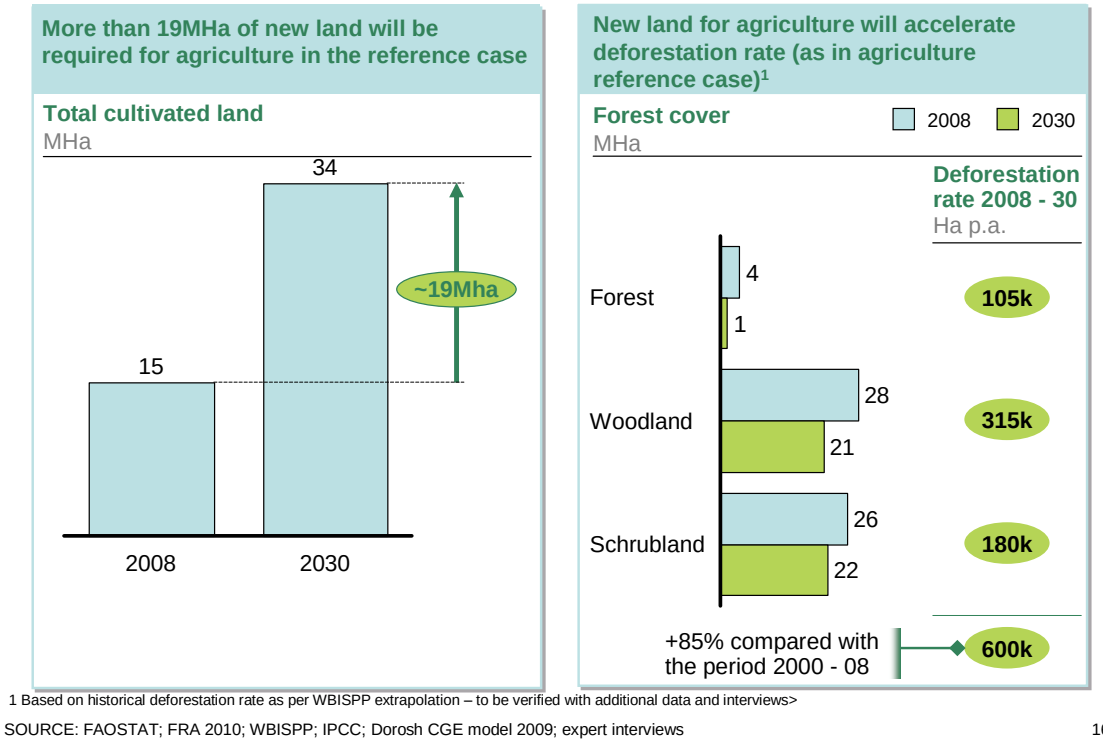


Figure 13: Forecasted evolution of land requirements for agriculture and impact on forestry in a traditional growth path[8]

The pace of conversion of forests to agricultural land is set to worsen in the coming years, driven by the political will to develop agriculture and demographic growth:

Agriculture is a core component of Ethiopia's ambitious Growth and Transformation Plan (GTP), which will bring Ethiopia to the status of middle income country by 2030. Government policies and services geared towards the achievement of food security and agriculture development have undermined incentives to preserve forest cover, and the development of profitable agriculture, including horticulture, coffee, tea and others has been given strong national support by the government's industrialisation and agricultural development policies. Federal/regional investment bureaus and investment authorities sponsor medium/large scale agro-industrial developments, while policies also exist to support small-scale farmers producing market-oriented agricultural products such as livestock and crops. In contrast, government support for forestry management, especially in natural forest, has tended towards conservation rather than supporting sustainable forest management.

Moreover, social demographic evolutions will be an additional strong driver of both demand and supply. The Ethiopian population is expected to reach ~130 Mln people in 2030, from 81 Mln in 2010, and demand is likely to increase as revenues and diets evolve.

[8] **Source: EDRI effort on Green Growth, 2010**

To support an expected population growth of 2-3 percent per year between 2008 and 2030 and Ethiopia's aspiration to achieve middle income status by 2020-2025, agriculture will then have to increase its GDP contribution by 10 percent a year, dramatically increasing land requirements if there are no major technological improvements or effective utilisation of inputs.

The combination of these factors, result in agriculture being significantly more attractive than sustainable forestry, encouraging conversion of forests to agricultural land.

This land use conversion, mostly due to smallholder farmers, often involves using fire as a technique to clear forest land and invigorate grass growth. Its impact on GHG emissions is double: firstly from deforestation itself, and secondly from the release of soil-based carbon, which can last 20 years.

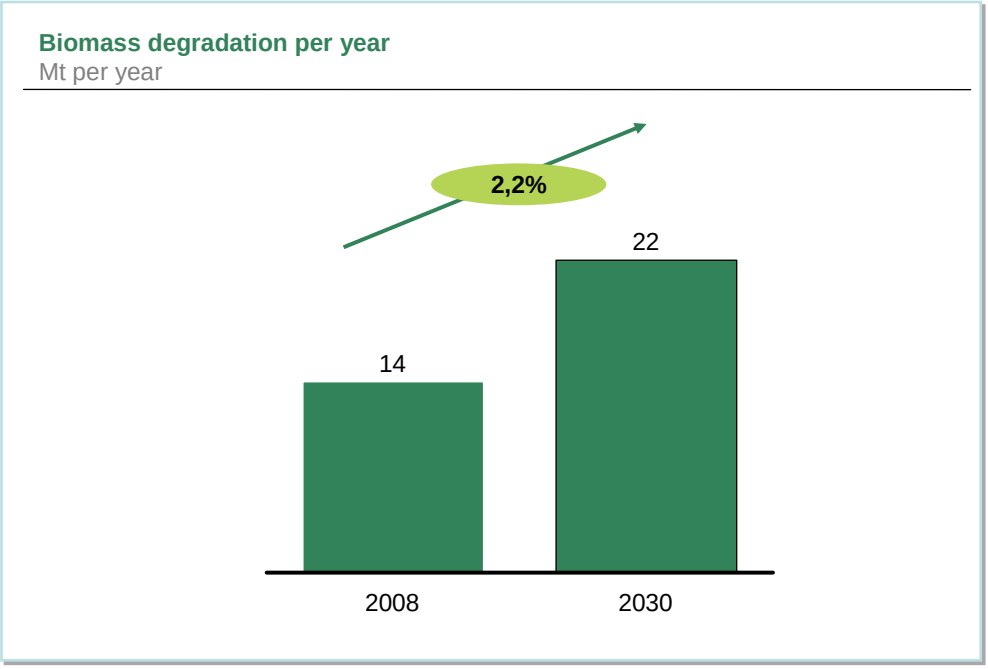
- Unsustainable fuel wood consumption

Unsustainable fuel wood consumption is the second largest driver of deforestation and degradation, and the main driver of forest degradation, causing the emission of an estimated 25 Mt of CO2 from deforestation in 2010[9]. Its impact is bound to increase up to 40 Mt by year in 2030, driven by sustained demographic growth, while fuel wood remains the main source of energy for the Ethiopian population.

Figure 14 shows the forecasted evolution of biomass degradation due to unsustainable fuel wood consumption, reaching 22Mt per year in 2030, from 14Mt in 2008

[9]Source: EDRI effort on Green Growth, 2010

Woody biomass degradation due to fuelwood consumption will be accelerated by increase in population



SOURCE: FAOSTAT; FRA 2010; WBISPP; IPCC; Dorosh CGE model 2009; expert interviews 18

Figure 14: Forecasted evolution of woody biomass degradation from fuelwood consumption, in a traditional growth path[10]

Ethiopia's energy consumption is predominately based on biomass energy sources (94%) *[Energy Policy of Ethiopia, 2006].* This includes traditional energy sources such as fuel wood, charcoal, branches, leaves and twigs.

As stated by the WBISPP, fuel wood consumption nowadays has limited impact on deforestation. Still, it represents a very important driver of forest degradation: between 2000 and 2010, degradation due to fuel wood consumption claimed an estimated 135 Mln tons of woody biomass from the total woody biomass existing in 2000.

Even though fuel wood was traditionally derived from dried up twigs, the occasionally dying trees, and more recently from eucalyptus plantations, these figures show that the current demand is far above the level of the sustainable yield of the existing biomass (yield from existing woody biomass including plantations, dead wood, leaves, fallen branches and clearing for agriculture). This degradation released an estimated 24 Mln tons of CO2 per year between 2000 and 2010.

In a 'business as usual' scenario, this level of degradation is expected to worsen in the coming decades, as fuel wood consumption is mostly driven by demographic factors. As

[10] **Source: EDRI effort on Green Growth, 2010**

the Ethiopian population grows by 2-3 percent per year until 2030, firewood consumption is expected to increase in the same proportions.

Other sources of energy may compete with fuel wood, mostly electricity and diesel or kerosene, but uncertainties remain on whether they will be accessible in rural areas, and competitive with firewood in both rural and urban areas.

Although it has no clear impact on deforestation, unsustainable fuel wood consumption prevents forests from regenerating, offsets their impact on carbon sequestration and leads to increased vulnerability to the adverse impacts of climate change.

- Other drivers of deforestation and degradation play a limited role

The other drivers that can be considered in Ethiopia are logging, clearing to convert to pastureland, and clearing to build infrastructures. None of the consultation and studies conducted in the preparation phase identified logging and infrastructures building as significant drivers of deforestation or degradation though.

Conversion to pastureland was identified as a potential threat, as livestock population is expected to increase in Ethiopia, to meet the demand of a growing population reaching middle income level by 2020-2025. According to the preliminary analyses conducted by the EDRI in 2010, total cattle population is expected to increase from 51 Mln animals in 2008 to 110-120 Mln in 2030. This driver will be addressed in component 2b-Strategy Options together with issues of conversion to agricultural land.

Analysis of the underlying factors enabling deforestation, at regulatory and institutional level

- The deforestation and forest degradation drivers described above are only so stringent because deficiencies at regulatory and institutional level have prevented to protect forests and encouraged deforestation or degradation. **Implementation of an unworkable regulatory approach to forestry:** Many regulatory policies regarding forest use have been un-implementable because of either lack of resources (i.e. financial, human and institutional capacity) or inherent deficiency of the forest regulatory instrument, and have resulted in widespread illegal/uncontrolled use of the forest. This, combined with irregularities and inconsistencies in the implementation of bans on forest products, created a disincentive for forest-dependent people to invest in forest management/protection because of a lack of security over future returns.
- **Insufficient/unclear user rights for forests:** Forest-dependent people are uncertain about their use rights over the forests. This has created a classic 'open access' mentality which has resulted in a clear lack of motivation for forest-dependent people to invest in forest management and development.
- **Lack of benefit sharing mechanism:** The Environmental Policy of Ethiopia has stated "To ensure that park, forest and wildlife conservation and management programmes which conserve biological diversity on behalf of the country allow for a major part of any economic benefits deriving there from to be channelled to local communities affected by such programmes". There is also a law that supports benefit sharing mechanism in connection to forest management (the Federal Forest Development, Conservation and Utilization Proclamation No. 542/2007, Article 10, sub-article 3). However, the said Policy and Proclamation cannot implement themselves. Their implementation requires the preparation and approval of subsidiary public documents; such as, standards, directives or guidelines whichever is appropriate.

- **Lack of empowerment of local communities:** Forest dependent communities often but not always lack the capacity to use their opportunity to influence decision making related to forests, nor articulate the underlying drivers of deforestation, because of resources limitation, limited use rights and organisation.
- **Lack of law enforcement:** Absence of a dedicated institution coupled with inadequate regulatory infrastructure are the primary causes for lack of implementation and enforcement of the particulars articulated or regulated under the policy and the proclamation issued in relation to forest management in Ethiopia. Therefore, in order to enhance the implementation of and compliance with the relevant policies and laws issued in the area of forestry requires designation of inspectors or monitors and enactment of regulations, standards, directives and guidelines to concretely define and elaborate the existing relevant public documents.

Assessments to be conducted during the R-PP implementation phase.

During the R-PP development consultations a number of issues arose from the consulted stakeholders that will require more assessment before REDD+ implementation. The action plan for assessments to be conducted during R-PP implementation is contained in Table 9 below. Note that planned assessments related to carbon stock measurement and monitoring are not included in this section but can be found under components 3 and 4.

Table 9 Assessments to be conducted during the R-PP implementation phase

Gap / Challenge Analysis	Proposed assessments related to land use, policy and governance to be undertaken during the R-PP implementation phase					
	What action	Entity Responsible	Method	Outcomes	M&E key indicators	Timing (in years)
The impacts and underlying causes of the two main deforestation and forest degradation levers (conversion to agriculture and unsustainable fuel wood consumption) need to be refined and more broadly syndicated with different stakeholders across regions – especially marginalised forest-dependent stakeholders	**Refine analysis of the environmental, economic and social costs of the drivers and underlying causes of deforestation and forest degradation, include broader spatial samples and engage a better representation of forest dependent communities.**	Coordinated by RTWGs. Conducted by qualified consultants, research organizations, Fed. EPA/reg. EPA, Environmental Units, MoA bureaus and NGOs working in partnership with local communities.	Participatory action research studies with various stakeholders in a large number of regions.	By June 2011: Refined review of the underlying causes of deforestation and degradation upon which to build draft REDD+ strategy options (See 2b) By End 2011: Finalized understanding of the underlying causes of deforestation and degradation upon which to build final REDD+ strategy options (See 2b)	• No. of drivers assessed • Comprehensiveness and depth of assessments • Level of participation/No. of key stakeholder organizations/ involved/ No. of regions covered • Comprehensiveness of established drivers of D&D	First review by June 2011 Final version by End 2011

Gap / Challenge Analysis		Proposed assessments related to land use, policy and governance to be undertaken during the R-PP implementation phase				
	What action	Entity Responsible	Method	Outcomes	M&E key indicators	Timing (in years)
The impacts and causes of large-scale clearance of the forest are not currently clearly articulated or sufficiently known in the public arena in Ethiopia and internationally.	**Develop a national consensus and create awareness on the causes and consequences of deforestation and forest degradation in Ethiopia, based on the analyses conducted.**	Coordinated by RTWG and RSC Conducted by multidisciplinary teams including consultants, research organisations, Fed/ reg. EPA and NGOs working in partnership with local communities.	• Syndicating and discussing the preliminary assessment of D&D drivers and underlying causes with all key forestry stakeholders at federal and regional level (e.g. Ministries, NGOs, development agencies, regional authorities)	Illumination of impact of D&D drivers on natural forests in Ethiopia shared through various media, aimed at promoting a review/revision of national policy with regards to agricultural development, (especially agri-business investments) and energy	• No. of consultation and information meetings held with relevant stakeholders • Content and No. of media coverage on the result of assessments • No. of policies revised as result of assessments	-2011
Insufficient critical analysis, learning or sharing among existing REDD+ pilots.	**Better leverage experience from PFM initiatives to feed into the assessment of drivers and development of strategy options, by holding experience**	Coordinated by RRTWGs. Conducted by qualified consultants, research organizations, Fed. EPA/reg. EPA, Environmental Units, MoAbureaus and NGOs working in partnership with	Project report review, questionnaire surveys , participatory action research and participatory multi-stakeholder	Lessons learned quickly from REDD+ pilots on what and what does not work generating 'best practice' benchmarks. These outcomes will feed into	• No. of assessments • No. of pilots covered • Comprehensiveness and depth of assessments • No. and quality of best practice	2011-2013

Gap / Challenge Analysis		Proposed assessments related to land use, policy and governance to be undertaken during the R-PP implementation phase				
	What action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing (in years)**
	sharing meetings on, and critical analysis of PFM initiatives including REDD+ pilots.	local communities.	workshops	the continuous improvement of REDD+ strategy (See 2b and 2c).	benchmarks • No. of lesson sharing meetings and level of participation	
Unclear understanding of how the current policy, law and institutional set-up is appropriate for REDD+ implementation, and a need to identify any gaps and strategies to address them	**Assess the current enabling environment with regards to REDD+.** **Identify policy, legal and institutional gaps that would hinder effectiveness of REDD+ implementation, and identify strategies to address these gaps**	Coordinated by RRTWGs. Conducted by qualified consultants, research organizations, Fed. EPA/reg. EPA, Environmental Units, MoA bureaus and NGOs working in partnership with local communities.	Policy, legal and institution reviews. Policy, legal and institutional environment-focused action research focussing on relevant national and international experiences on REDD+ implementation.	Thorough understanding of enabling environment necessary for successful REDD+ implementation, identifying challenges and strategies to address challenges. These outcomes will feed into REDD+ implementation (See 2c)		2011

Budget

Table 10 Budget for assessment of Land Use, Forest Policy and Governance Issues

Budget for assessment of Land Use, Forest Policy and Governance Issues					
Main Activities	Estimated Cost (in thousands USD)				
	2011	2012	2013	2014	Total
1. Refining analysis of the impacts of drivers and underlying causes of deforestation and forest degradation, taking into account broader spatial samples and better representation of forest dependent communities.	200	50	-	-	**250**
2. Development of a national consensus and creating awareness on the causes and consequences of D&D in Ethiopia	80	-	-	-	**80**
3. Holding experience sharing meetings on, and critical analysis of, PFM initiatives including REDD+ pilots.	80	40	40	-	**160**
4. Assessment of the current enabling environment with regards to REDD+. Identify policy, legal and institutional gaps with regard to facilitating successful REDD+ implementation and identify strategies to address these gaps.	120	50	-	-	**170**
Total	**480**	**140**	**40**	-	**660**
Government	90	20	-	-	110
FCPF	80	10	10	-	100
UN-REDD Programme	130	40	10	-	180
Nordic Climate Facility-NCF	130	50	20	-	200
French Development Agency-AFD	50	20	-	-	70

2b. REDD Strategy Options

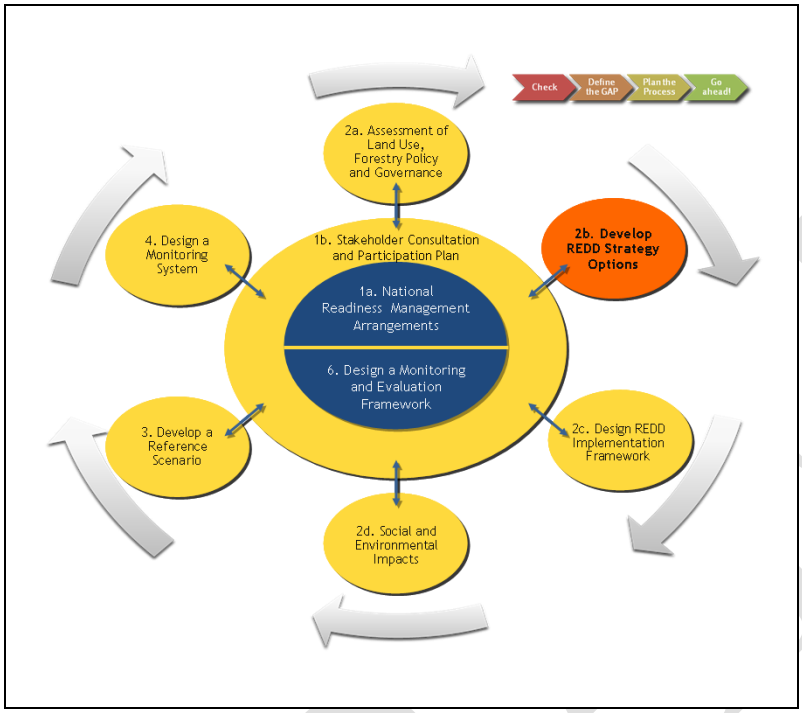


Figure 15 Component 2b in the REDD readiness wheel

This section presents two analyses necessary to setting up REDD strategy options: A first analysis of existing strategies to avoid deforestation and degradation identifies a niche for experimental REDD+ pilots which will be supported during the implementation of this R-PP to generate lessons so that best practice in REDD+ implementation in the Ethiopian context can be generated through a learning-by-doing process. These lessons will then feed into the implementation framework for widespread REDD+ implementation described in sub component 2c. A second analysis, focused on prospective strategies to address the causes of deforestation and forest degradation identified in component 2a, gives a preliminary overview of the most efficient mechanisms to leverage.

A participatory and iterative approach to the development of strategy options

The tentative REDD+ strategy options presented in this section were developed based on the combined input of existing REDD+ related 'on the field' efforts in Ethiopia as well as a preliminary 'green growth' national economic analysis. The consultation process with representatives from all major forest stakeholders has been leveraged in this R-PP process. The stakeholders presented, debated about and then collectively prioritised strategy options based on various criteria including cost effectiveness. This work was complemented by the effort on "Green Growth" led by the EDRI in 2010, with the support of the Global Green Growth Institute, that provided preliminary assessments of impact, cost and feasibility of most strategy options developed in the second part of this section.

However it is recognised that during the development of this R-PP not all the 'answers' are known with regards to the best strategy options for REDD+ support. Therefore during R-PP implementation a process of consultation will continue to identify the best options. The process of refining and testing the strategy options will follow a participatory action research approach. This means that during the R-PP implementation there will be a strong emphasis on experimentation – through

continuous cycles of planning, experimenting and reflecting options that will continually improve through feeding the lessons learned back into the implementation process. There will also be strong stakeholder engagement in each stage of the learning process so that the views of people who are dependent on forests are involved in planning, implementation, monitoring, and evaluation of strategy options. This ensures that as options develop they take into consideration local realities and aspirations of forest dependent communities.

Critical review of past and current strategies to address deforestation and degradation

It is important to nest REDD+ support in past and existing experiences of strategies that address deforestation and degradation in Ethiopia. Current strategies aimed at addressing deforestation and degradation in Ethiopia within the current legal and policy framework can be divided into:

(1) Plantation forest of exotic species,

(2) Agroforestry,

(3) Area closures of deforested areas for natural forest regeneration,

(4) Protected areas of natural forest, National Parks

(5) CDM project areas related to plantations/reforestations,

(6) Devolution of forest management through participatory forest management (PFM),

(7) Traditional/customary forest management practices,

(8) REDD+ pilots

(9) National Bio fuel Strategy: national biogas program, rural electrification [renewable energy], dissemination of fuel efficient improved stoves

(10) Food Security Strategy

(11) Integration of REDD+ into budget, laws, policy, strategy, program, plan and projects

Note however that there is significant overlap between some of these forest management strategies - for example REDD+ pilots are currently being developed in PFM forest areas which include many traditional forest management practices and area closures.

The following sections contain critical reviews of these 11 strategies. The reviews are based on a combination of a literature review and inputs from the stakeholder consultation process to develop this R-PP. Examples and details regarding Ethiopian forest related institutions, projects, and capacities are listed in Component 3.

(1) Plantation Forestry

In 2003 industrial plantations covered about 230,000 ha and were dominated by exotic species *Eucalyptus* and *Cupressus lustanica*. These are largely managed by government although private investment and private ownership is increasing. Where present, the Forest Enterprise's are being tasked with the management of these plantations. In

some plantations in Oromia, Joint Forest Management between the enterprises and some communities has been set up.

Rapid expansion of privately owned small scale *Eucalyptus* woodlots has been encouraged by the relatively quick returns of *Eucalyptus,* increasing market value, limited restrictions on harvesting and sale, and recent land certification programmes giving more tenure security over agricultural land. This practice is expanding at a high rate and it is turning into the largest source of non-food crop income for rural households in the country (Turnbull, 1999; Jagger & Ponder, 2000; Zenebe et al., 2007).

Bamboo is being earmarked as a plant with a lot of potential in Ethiopia, with many government agencies and projects (e.g. The Eastern Africa Bamboo Project) now promoting it as a multi-purpose crop that also has many environmental benefits. It has been proposed that increased production and use of bamboo could offset the use of wood from natural forest, leading to the conservation of endangered tree species (R-PP questionnaire, 2010).

During the consultation process on the R-PP development there was a lively debate on the contribution of plantation forestry to reducing degradation and deforestation of natural forest. One camp argued that plantation forests will take the pressure off the natural forest. The other camp argued that the unrealised economic potential of sustainable utilisation of natural forests is a key reason why farmers convert natural forest to agriculture. Those of the latter opinion argued that forgetting to focus on realising the economic potential of natural forests will lead to an Ethiopian landscape made up of either agriculture or exotic plantations with very little natural forest left.

(2) Agroforestry

Ethiopian farmers recognise the benefits of mixing certain tree species with crops: it increases the productivity of the crops and it diversifies both subsistence needs and income from tree products, including fodder and fruit. Specific Ethiopian examples include the retention of trees on farmland for gum production, the production of honey from tree based bee hives, and using the shade that trees provide for producing coffee.

An interesting issue with farm based trees is that many indigenous species of tree are banned from being cut down, even if they occur naturally on a farmers' land. As a consequence farmers prefer to plant exotic tree species which they are allowed to harvest and sell (such as *Eucalyptus*), rather than encourage indigenous species to grow naturally on their farms, as they will have difficulty harvesting and selling the wood of these species (R-PP questionnaire, 2010).

During the R-PP development consultation process the role of agroforestry in addressing deforestation and degradation was similarly discussed with regards to plantations. Many indicated it to be key in taking the pressure off the natural forest; others suggested that it is important not to forget the importance of continued use and benefits from natural forest as a way to encourage continued interest in natural forest maintenance by forest dependent communities.

(3) Area Closures,

Area enclosures cover a wide range of land in Ethiopia in vulnerable environmental areas. For example they cover eight percent or 400,629 ha of land in the Tigray region (Lemenih and Woldemarian, 2010). This approach aims to rehabilitate endemic features, e.g. eroded watersheds, through protection from human and livestock use,

and rehabilitation of plots. The approach is often combined with improved land husbandry and gully reclamation techniques.

However a key issue with these enclosures is that they were often created in food for work or food for payment schemes, whilst the rights to use the planted trees remained unclear to local people (Derero et al. 2010). Studies suggest that because of this, local people have not always kept up their protection activities after the initial project support stopped (Tefera *et al.*, 2005). This has led to the failure of several area enclosure initiatives, particularly in central and southern parts of the country (Betru *et al.*, 2005, Lemenih and Woldemarian, 2010). During the R-PP development consultation process there were several proponents from government agencies who suggested continued support to consolidate and scale up Area closure systems. However others present at the consultation process not only pointed out the user right issue, but also critiqued the cost effectiveness of such approaches in comparison to other approaches in addressing degradation and deforestation (R-PP questionnaire, 2010; Betru *et al.*, 2005; Lemenih and Woldemarian, 2010). In northern Ethiopia, area closures and cutting and carrying fodder are usually integrated. The resulting increase in animal dropping by the homestead is used for making compost as soil conditioner. This raises agricultural production and makes the area closure attractive. The required coordination is brought about by the whole community in a micro-catchment being organized to function under its own elected leadership which enforces agreed bylaws. In hitherto deforested areas, especially in Northern Ethiopia, area closure with enrichment planting has enabled much land that had lost its forests cover to reforest ( ). Cutting and carrying grass and loping fodder tree branches have made it possible to restrict and often altogether stop free range grazing. The animals become better fed and their droppings are used for making compost as fertilizers. In this way, the forest cover, agricultural production and animal husbandry have improved, thus also improving the economic situation of the mixed farmers.

(4) Protected Areas

Government-controlled forest conservation initiatives began in Ethiopia in the mid 1970s. These initiatives have resulted in the establishment of different types of protected areas such as state-owned Forest Priority Areas (FPAs), National Parks, Game Reserves, Sanctuaries and Controlled Hunting Areas. Areas that are designated as National Forest Priority Areas (NFPAs) cover an area of 2.8 million ha of natural forest, and have as principal objective to protect and conserve biodiversity (Teketay, 2010). However, NFPAs are reported to be neglected and degraded due to agricultural conversion and uncontrolled harvesting practices (Derero et al. 2010; R-PP questionnaire, 2010; Lemenih and Woldemarian, 2010). According to participants in the R-PP consultation process this failure is largely due to the 'open access' problem: local people are not feeling responsible for resources that do not belong to them. Adding to the problem is the lack of government resources to protect these areas. Sometimes there are not even enough resources to demarcate and gazette the forests. However, in protected areas where the PFM projects and customary management systems still exist there are notable exceptions where the local people are actually investing in the protection of these forests.

With a few exceptions, the current status of the protected forest strategy is discouraging. They are suffering from continuous human encroachment and other forms of severe disturbances according to Lemenih and Woldemarian, 2010.

During the R-PP consultation process it was suggested that a dual strategy should be used for protected areas, with buffer zones and core protection areas. The buffer zones would be created in areas where forest dependent people are established, and they would focus on conversion to Participatory Forest Management programmes with formalised local control, sustainable forest management, and benefit sharing between government and communities. Protection efforts would then be concentrated on core biodiversity rich areas: Forestry Areas, National Parks, Reserves, Controlled Hunting Areas, etc.

(5) Clean Development Mechanism supported reforestation projects

There is one project registered under the Clean Development Mechanism (CDM) located in the Humbo area (UNFCCC registration Dec 2009, area of 2 728 ha); and there are three further projects, in the Abote, Ada Berga, and Sodo areas, that are mentioned or presented as potential CDM project (currently not registered at UNFCCC).An additional CDM project, covering an area of 20,000 ha earmarked for afforestation/ reforestation in the Amhara National Regional State, is under discussion.

On numerous occasions during the R-PP consultation process it was pointed out that these CDM projects are a key source of information when developing and implementing REDD+ pilots. Experiences from the CDM projects on developing and innovating mechanisms for payment of environmental services, including benefit sharing mechanisms for community groups and MRV systems, contain valuable lessons for REDD+ projects.

There was also criticism regarding the CDM projects. It included questions about the cost effectiveness of the projects, about challenges in cash flow systems, and about the complexity of the MRV systems. However, as these were the first projects of its kind in a new area of work, high initial costs are to be expected.

(6) Participatory Forest Management (PFM)

PFM started in Ethiopia in the second half of the 1990s and covered 140,857 ha in 2008 (0.2% of forest and woodlands) (Tsegaye Tadesse, 2010, unpublished). PFM programs have been demonstrated to be successful in addressing deforestation and degradation. The key to their success has been by instilling ownership value over the forests to local people, and undermining the 'open access' mentality combined with the promotion of the benefits from sustainable forest use. The approach has induced enhanced forest regeneration, improved forest protection, and regulated access (Lemenih and Woldemarian, 2010). In terms of criticism, during the R-PP consultation process concerns were put forward that there is 'leakage' from some PFM sites: communities do protect the forest devolved to them, but then over-utilise neighbouring 'open access' forest to compensate. It has also been suggested that in the absence of support from an NGO, PFM may not be sustainable (in Lemenih and Woldemarian, 2010). In addition to this the approach has to be made much simpler and cost effective before it can be mainstreamed.

REDD+ support supplementing PFM development was put forward by numerous respondents as a socially acceptable and cost effective way of using carbon revenue to address deforestation and degradation (R-PP questionnaire, 2010).

(7) Traditional Forest Management Systems

There are numerous traditional forest management systems in the country where patches of forests are still being protected for spiritual reasons, or where customary

rules and regulations for 'wise' use are still being applied. In the *Kobo* system, which still being applied in many regions of the country, trees are allocated to individuals to develop bee hives, and the maintenance of trees has been attributed to it. Although traditional systems present resource management strategies proven sustainable over long periods of time (Dereje & Tadesse, 2007; Watson, 2003), they too have received criticisms during the R-PP development consultation process. The most notable criticisms were that some customary systems are not democratic as it are clan leaders that are in charge, and some practices such as the use of tree trunks to make bee hives and the use of fire to extract honey are destructive practices.

Places of worship, especially churches and graveyards, have groves around them. Some of these are forests up to tens of hectares in size. Religious reverence keeps these groves and forests protected and they dot the landscape. They are valuable because they serve as sources of seed dispersal for native forests to regenerate in area closures.

It was recognised during the R-PP consultation discussions that all customary forest management systems in Ethiopia even groves and forests around places of worships are in decline and under threat from various sources (including internal migration and modernisation), and that REDD+ support through e.g. PFM programmes that formalise the traditional user rights could help preserve and reinvigorate these approaches.

(8) REDD+ Pilot Projects

REDD+ pilots are in preparatory stages in Ethiopia, and they exist in the Bale eco-region (500,000 ha), in the Tha Yayu and Gedo forests (190,000 ha), and in the Baro-Akobo area (7,610,300 ha), as well as in the south west of the country (*Tsegaye Tadesse*, 2010). But the most extensive are the local community bylaw based area closures of northern Ethiopia. These pilots are generally designed to feed into both PFM programmes and protected area programmes that are developing PFM buffer zones. They are pioneering the development of REDD+ implementation in the country (developing carbon accounting, benefit sharing mechanisms), and will be essential sources of information during the R-PP implementation phase. More discussions on how the REDD+ pilots can be supported during the R-PP implementation stages are discussed in the following sections.

(9) National Bio fuel Strategy: National Biogas Program, Rural Electrification [renewable energy], Dissemination of fuel efficient improved stoves

Ethiopia is embarking on an ambitious energy program including electric dams, plantations for bio fuel development, wind energy, solar energy and other sustainable renewable energy sources. This will lead to shift from wood energy and other similar fossil fuel energy sources to environmentally friendly renewable energy sources. Therefore, REDD+ would play in capitalizing this positive efforts in fighting and addressing climate change issues at national and international arenas. Such shifts in energy sources will reduce deforestation and use of crop residues and cow dung for fuel. In addition to that, it should be noted that bio fuel plantation will not compete for arable and forest lands.

(10) Food Security Strategy

The negative impact of recurrent drought on human lives in Ethiopia has very much aggravated by D and D. in this regard, the GoE in its ***Growth and Transformation Plan*** has developed a strategy by which several million people who are prone to chronic poverty will be self sufficient in food security within the coming five years time from now. One of the various programs that would address food security is to

enhance tree planting that would help the poor that would develop economic assets and environmental resilience.

11. Integration of REDD+ into budget, laws, policy, strategy, program, plan and projects

The importance of undertaking environmental assessment at strategic and project level is recognized under the laws of Ethiopia. The need to undertake risk assessment prior to the release of genetically modified organisms is also regulated in order to ensure ecosystem and human health. However, their implementation and thus their effectiveness are limited. Despite this fact, the application of strategic assessment enables to integrate concerns of REDD+ into national budget; and into socio-economic development policies, strategies, plans and programs. The application of environmental assessment at a project level also enables to evaluate adverse impacts and integrate appropriate response measures into the life cycle of major public or private investment projects on forestry ecosystems prior to their implementation. Therefore, identifying limitations of existing environmental assessment regulatory system and taking the necessary corrective measures for enhanced integration of REDD+ at all levels will help to contain the adverse impacts likely to result on forest ecosystem in a proactive manner.

Identification and preliminary assessment of strategy options to address causes of deforestation and forest degradation in Ethiopia Having identified in component 2a the main two drivers of deforestation and forest degradation, namely conversion to agricultural land and unsustainable fuel wood consumption, and based on work done in 2010 by the EDRI, this section presents a preliminary assessment of the main strategy options identified for Ethiopia to mitigate deforestation and forest degradation, as well as their related cost and abatement potential.

Based on preliminary assessments, a combination of levers aimed at increasing yields in agriculture, improving soils and forest management and adopting alternative clean energy and energy efficient stoves could be at the basis of Ethiopia's REDD strategy. As Figure 16 shows (although also including sequestration mechanisms – reforestation and afforestation),more than 130Mt of CO2 abatement opportunities would come at the low cost of 11 USD/ton or below (~100Mt excluding afforestation and reforestation levers)

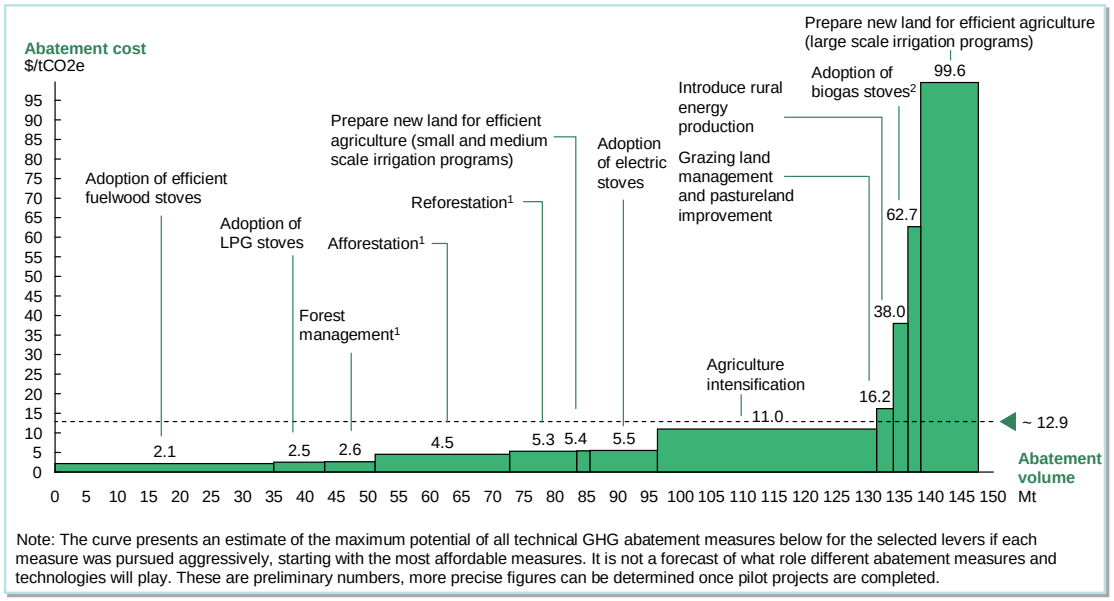


Figure 16: Cost curve of strategy options to reduce deforestation and forest degradation and increase carbon sequestration[11]

A preliminary assessment of each strategy option has been done by the EDRI in 2010, in order to quantify the impact, cost and feasibility of each mitigation mechanism and then be able to prioritize them. Syntheses of the main hypotheses (as well as the associate degree of certainty), and assessment of cost/mitigation potential are presented in the Annex 2b-2**.** In the coming month, this work needs to be refined to precisely assess the impacts of these levers on forestry, the economy and the society, their feasibility in terms of cost and capabilities, and their potential role in adaptation to climate change.

Four categories of levers have been identified and a further detailed in the rest of this section: reducing land conversion to agriculture, limiting the impact of fuel wood consumption, developing sustainable forest management practices, and other solutions to improve carbon sequestration (afforestation/reforestation)

Reducing land conversion to agriculture (including pastureland)

A combination of measures aimed at improving yield and better managing current agricultural land and pastureland can dramatically reduce additional land requirements for agriculture by 2030, from 19 Mha to 7Mha, as presented by Figure 17.

[11] Source: EDRI effort on Green Growth, 2010

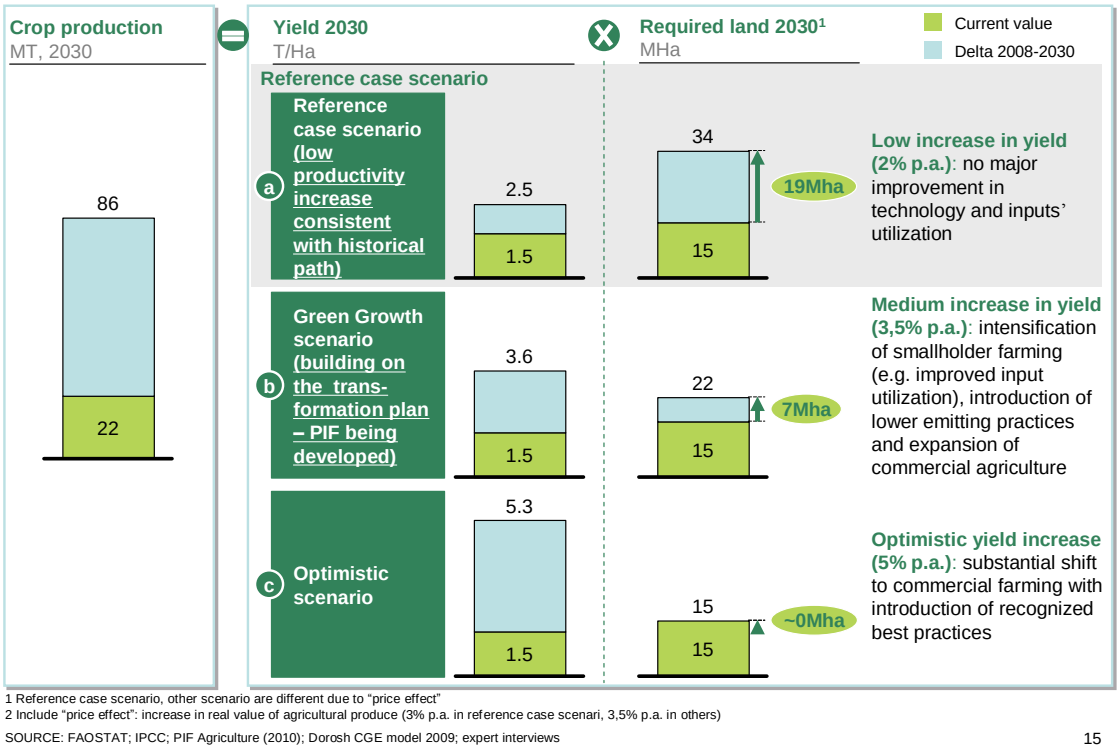


Figure 17: Land equation implied by traditional, "Green Growth" and optimistic development scenarios of the agricultural sector[12]

- **Increase farmland productivity:** Promotion and introduction of best practices aimed at maximizing agricultural yield from both public and private stakeholders. Ethiopia's farmers could dramatically increase crop yields by using improved seeds (new varieties and higher quality) and basic, low-cost irrigation systems, increasing the use of fertilizers and manure and adopting best agronomic practices (e.g., harvest and post-harvest management).

  Less than 5% of agricultural land today is irrigated, and overall efficiency of these infrastructures remains low. The new hydroelectricity infrastructures planned will provide water reservoirs for large irrigation schemes. GHG emissions abatement impact can be maximized by focusing on degraded land, with lower stock of carbon.

  An agricultural intensification program that targets 75 percent of farmers and reduces land requirements by more than 12 MHa (~ 600 kHa per year) would cost approximately $7.7 billion between 2010 and 2030. It would generate 700 MtCO2e of avoided emissions that would otherwise have resulted from deforestation. Additional benefits of agricultural intensification include reduced soil degradation, creation of green jobs and improved food security.

[12] Source: EDRI effort on Green Growth, 2010

- **Grazing land management and pasture improvement techniques:** Introducing best practices in balancing grazing intensity and productivity, grasslands irrigation, introduction of new grass species, and grassland closure would decrease requirements for new pasture land and increase carbon stock in pasture land. We estimate that this would cost approximately $450 million between 2010 and 2030 and would generate 28 MtCO2e of avoided emissions. The abatement cost would be $16 per tCO2e.
- **Integrate animal feed and fertilizer production into reforestation**
- In Ethiopia, the oxen drawn plough requires agriculture to become mixed for crop and animal production. Therefore, when area closure regenerates forests, it can be made to increase animal feed for cutting and carrying. The domestic animals in restricted areas produce their droppings, and thus compost can easily be made to increase agricultural production. This becomes an inbuilt motive for organized local community to protect area closures and increase forest cover.
- **Support profitable forestry:** Creating a supportive environment for forest and wildlife enterprise development based around sustainable forest management principles will provide consumers with a legal supply of forest products from wisely managed forests. Without creating this supply from sustainable controlled sources, demand will continue to be satisfied with products from unsustainable sources, which will lead to degradation. Such support will help sustainable forestry to become a profitable alternative to converting forests to agricultural land.

These strategic priorities offer the combined benefit of supporting economic growth and limiting deforestation and forest degradation, and suggest that the government considers integrating them in the transformation plan under development by MOARD.

Limiting the impact of fuel wood consumption

There are two main ways to decrease demand for fuel wood: new technologies to produce energy from biomass (bio-fuel) or other alternative sources (solar), and more efficient fuel wood stoves or alternative green technologies. As presented in Figure 15, the adoption of more efficient fuel wood stoves has the largest potential impact and the lowest estimated cost per ton of C02 of all mitigation mechanisms considered.

- **Rural energy production:** This is an attractive option because of the large availability of agricultural residues and the substantial emissions benefits. EDRI has examined the adoption of electricity generation from biomass[13] (i.e., agricultural residues resulting from agro-processing) and estimates that installing a total capacity of 5000 MW by 2030 (25 medium plants and 2,500 to 5,000 small plants) would cost approximately $930 million and would generate 25 MtCO2e of avoided emissions thanks to avoided forest degradation.
- **Efficient fuel wood stoves and other cost-effective green technologies:** Such technologies, if sufficiently widespread in the country, would decrease fuel wood demand. These include efficient fuel wood stoves with a fuel wood saving potential of 30-60 percent, stoves generating biogas from decomposing biomass for cooking or lighting, and LPG and electric stoves. EDRI estimates

[13] Source: EDRI effort on Green Growth, 2010

that large-scale introduction of cost-effective green cooking technologies would cost approximately $1.9 billion and would generate 590 MtCO2e of avoided emissions to avoided forest degradation.

- In addition to these two main solutions focusing on demand, consultations showed that Ethiopia should continue with periurban and rural homestead plantations supplying for firewood. Most towns and rural homesteads have plantations for firewood, mostly Eucalyptus. The economic returns from such plantations are reward enough and that is why virtually the whole country is now dotted with them. Traditionally, it is children that have collected dead branches from forests and woodlands for firewood. Now that more than 90% of them attend school, there is an inbuilt motivation to continue planting trees in periurban areas and by rural homesteads for firewood

Develop sustainable forest management practices

Various solutions for sustainable forest management can be leveraged in Ethiopia. Three promising options have been identified by the EDRI:

- Further development of wood plantation of fast growing species for fuel wood consumption or timber, enabling sustainable logging.
- Participatory forest management enabling local communities to be part of decision-making in all aspects of forest management, from managing resources to formulating and implementing institutional frameworks
- Protected areas: protection of forest areas primarily through mean of laws

Other solutions to improve carbon sequestration

Beyond actions to reduce deforestation and forest degradation, Ethiopia also shows a potential for actions of reforestations / afforestation, that will increase carbon stocks. Analysis done by the EDRI suggests that a large-scale afforestation and reforestation program covering 3.0 Mha by 2030 would generate 425 MtCO2e of avoided emissions at a cost of $1.8 billion

According to preliminary EDRI estimates, afforestation potential (i.e.planting of trees on non-forest lands, such as grasslands, marginal pasture land, marginal cropland) can include 1 Mha from marginal agricultural area, and 1 Mha from marginal pasture land, while reforestation on non-forest lands (degraded forest) can account for 1 Mha.

It must be noted that afforestation and reforestation remain constrained by land availability and requirements for new agricultural land.

Analysis of the adaptations required in the regulatory and institutional environment in Ethiopia to enable REDD mechanisms

A series of regulatory and institutional evolutions are needed to enable the efficient implementation of the strategy options identified, reaching beyond the forestry sector and focused on local people's rights, development of a dedicated forestry institution and better coordination of land use.

- **Clarify, reinforce and support local people's right:** REDD+ will support PFM and the various community institutions set up within PFM. Secure rights to

forest use plus allowances for benefitting from the forest resources have motivated forest dependent people to invest in forest management and protection. Providing support for piloting in areas with high ecosystem service and areas of high risks of deforestation and degradation or; if appropriate, to existing pilot areas will be cost effective. This support will be at both field level (2b) and policy level (2c).

- **Support development of service oriented institution:** It is clear that there is an institutional vacuum in Ethiopia regarding forestry, and the implementation of R-PP will provide some support to fill the vacuum as may be decided by the Environmental Council. By providing more services in support of sustainable forest management as well as support to the marketing of products, forestry will become more attractive leading to further investments in forest management.

- **Better coordinate land use planning:** More coordinated land use planning means that migrations/population increase can be better planned to avoid loss of forest.

The strategy options presented in Table 11 will be further developed using a logical framework analysis approach for each option. This way an objective oriented plan will be developed with clearly articulated milestones and outputs. The logical framework analysis (LFA) process (see annex 2b-x) will ensure that the options are rooted in the existing context, as key stakeholders – including forest dependent communities – will be engaged in the LFA process.

To generate best practice in REDD+ support it is recommended to test various approaches to address deforestation and degradation. Through comparing and contrasting different approaches the most effective ones can be identified and made to form the basis for REDD+ strategy development before widespread REDD+ implementation. This is why strategy option 1 in Table 11 focuses on experimental pilots.

Table 11 REDD+ strategy options

Gap / Challenge Analysis	REDD+ strategy options					
	Actions	**Responsibility and target**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
Confirm, refine and develop broad syndication of the assessment of REDD-related mitigation levers identified through the Green Growth effort	**Alignment on methodology and results of the work on Green Growth among main REDD institutions (RSC, RTWG, regional level institutions), and test the preliminary results with a broad range of stakeholders, including local communities**	Explanation of methodology and dissemination of results administered by the RTWG, targeting main REDD stakeholders. Focus on testing the identified options with representatives from local communities	Organization of workshops with local institutions (e.g. Regional RTWG) and communities to share preliminary results, gather additional insights and refine the analysis	Broad national alignment on the results of CRGE work, additional insights gathered to refine the analysis	• No. of workshops held • No. of regions concerned by at least 1 dedicated workshop	2011
Strategy options need to be prioritized based on refined assessments	**Refining preliminary studies of impact (environmental, economic and social), cost and feasibility of the proposed mitigation mechanisms and select those to be tested in pilots**	Administered by the RTWG, with support from stakeholders involved in the CRGE work in 2010.	Refine assessments of impact, cost and feasibility based on available data and new insights gathered, with support from stakeholders involved in the CRGE work . Draft interim report and prioritization by June 2011 to input into the draft REDD strategy	Final assessment of proposed mitigation mechanisms List of selected mechanisms to test in new pilot projects or that can be tested in existing pilots in a cost effective way	• No. of mitigation mechanisms selected for pilot projects • No. of existing pilot projects that can be leveraged	First review by June 2011 Final prioritization by End 2011

			Draft a final report on mitigation levers, syndicate results and prioritize levers to test in pilots, together with the RSC and the Regional RTWG, by End 2011			
Pilots are needed to test the strategy options identified	**Definition of a list of pilot projects required to test the priority mitigation mechanisms.** **Definition of their duration and the technical aspects wished.** **Setting objectives**	Administered by the RTWG in coordination with the RRTWG to adapt to local specificities	Definition for each mechanism to test of the relevant set of pilots required to understand its impacts and costs, at environmental, social and economic levels First assessment of the capacity required	List of pilots to implement	• No. of pilots • Comprehensiveness of the impacts and costs tested • Comprehensiveness of the adaptation to local specificities	2011
Developing REDD+ pilots from scratch to address deforestation and degradation can be very expensive and the time frame to achieve results might not fit within the R-PP implementation phase.	**Identification of existing projects that can be leveraged to test mitigation levers.** **Provide supplemental support for pilots matching with the selected mitigation levers to test**	Administered by the RTWG and RRTWG with support from NGOs, FEPA and MoA Targeting existing REDD+ pilot projects and/or projects that address degradation and deforestation.	Small grant mechanism with theme based calls for supplemental funding to existing projects that are relevant to test the selected mitigation levers. Proposals are assessed based on various criteria. Funding is conditional on whether SESA guidance is observed and a participatory	Lessons from concrete experience on what the most effective REDD+ strategy options are, to input on the final REDD strategy document presented by End 2013	• No. of pilots supported • No. and comprehensiveness of concrete lesson gained	2011-2013

			action research approach is applied, where key stakeholders are engaged in decision making, learning, and documenting lessons for knowledge sharing.			
According to the range of topics covered and the quality of REDD+ projects currently launched in Ethiopia, they may not cover all the mitigation levers that need to be tested. It may be necessary to launch new projects from scratch to test some of the mitigation levers selected	**Development of and support to new REDD+ pilots, in complement to existing pilots**	Administered by the RTWG and RRTWG with support from NGOs, EPA and MoA	Grant mechanism and technical support to launch and manage new projects. Day to day management of the project shall be given to stakeholders already involved in successful REDD+ pilots Funding is conditional on whether SESA guidance is observed and a participatory action research approach is applied, where key stakeholders are engaged in decision making, learning, and documenting lessons for knowledge sharing.	Lessons from concrete experience on what the most effective REDD+ strategy options are, to input on the final REDD strategy document presented by End 2013	• No. of pilots supported • No. and comprehensiveness of concrete lesson gained	2011-2013
As REDD is a new approach, best practice in REDD+ governance is not fully understood	**Participatory action research pilot project that examines experiences with all REDD+ pilots**	Should be undertaken by any interested and qualified body under direct	This learning project provides support to the development of Good REDD+ Governance mechanisms, and conducts action	Thorough understanding of poor and best practice in REDD+ governance (and	• participatory action research pilot project launched • No. of REDD+ pilot project covered	2011-2014

	and PFM initiatives, identifying best practice in cash flow, accounting, democratic decision making, etc.	supervision and reporting to the RSC and RRSC (rather than the RTWG and RRTWG) so that it can be seen as un-biased.	research with implementers of existing pilots on governance issues.	all associated mechanisms) to feed into REDD implementation frameworks at both national and regional level.	by the research project • No. of best practices gained and comprehensiveness of BP.	
Lessons from REDD+ pilots and PFM initiatives are currently not harnessed in an effective way, and there is no coordinated voice from REDD+ pilot implementers in the country.	**Developing a REDD+ learning network**	The network will be chaired by the RTWG and RRTWG and should involve stakeholder representative from all REDD+ pilot sites and PFM initiatives, including community representation. Could be supported by consultants/NGOs for various tasks including document preparation.	The network will have the purpose to ensure that lessons from REDD+ pilots and PFM initiatives are analysed and shared and fed into practice on the ground through the development of best practice guidelines and manuals. The network will also act as a policy support group to try to influence policy to be more supportive of REDD+ pilots. One central information point is created to provide information on REDD+ throughout the country, and links to international	REDD+ pilot lessons are effectively harnessed and applied. Best practice REDD+ guidelines and manuals are developed. A strong coherent voice to represent those engaged in REDD+ pilots with influence on policy.	• No. of established REDD+ learning network • Membership No. of the network • Inclusiveness and effectiveness level of the network	2011-2014

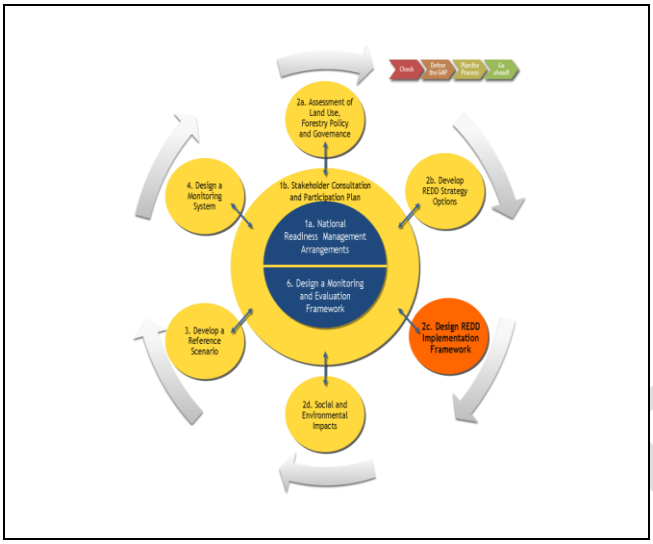
			activities. Activities with the REDD Desk are ongoing.			

Budget

Table 12 Summary of Strategy Activities and Budget

Budget for REDD Strategy Options						
Main Activity	Specific activity	Estimated Cost (in thousands USD)				
		2011	2012	2013	2014	Total
1. Sharing, refining and selecting mitigation levers identified	1a. Workshops of presentation and review of preliminary findings with forestry stakeholders, especially at local level	250	30	-	-	**280**
	1b. Additional analyses to finalize assessment of impact, cost and feasibility, prioritization of levers to test	250	150	-	-	**400**
	1c. Definition of a list of pilot projects required to test the priority mitigation mechanisms	250	30	-	-	**280**
2. Adaptation or development of REDD+ specific pilot projects	2.a Supplemental support for existing pilots matching with the selected mitigation levers to test	450	450	400	60	**1360**
	2.b Development of and support to new REDD+ pilots required	450	350	250	90	1140
3. REDD+ Good Governance pilot project	Support for REDD governance mechanisms development including through action research studies on REDD+ governance	350	300	250	100	**1000**
4. Establishing the REDD+ learning network	Secretariat costs, travel, and meeting costs	90	70	50	20	**230**
	Costs of producing publications, manuals etc.	70	50	30	20	**170**
Total		**2160**	**1430**	**980**	**290**	**4860**
Government		130	50	50	45	275
FCPF		650	600	200	55	1505
UN-REDD Programme		600	320	300	50	1270
Nordic Climate Facility-NCF		700	400	330	100	1530
French Development Agency-AFD		80	60	100	40	280

2c. REDD Implementation Framework



This section outlines what has to be done to develop the REDD+ implementation Framework during the R-PP implementation phase. The implementation framework will include various mechanisms and institutions that do not currently exist and that are necessary to coordinate and administer REDD+ implementation. The implementation framework will also include the enabling governance environment that is necessary to support strategies to effectively and efficiently address deforestation and degradation.

Figure 18 Component 2c in the REDD readiness wheel

This will include support to both policy implementation and revision as well as support to institutional strengthening and reform.

In general, the section lays out the necessary steps to develop by the end of 2013 the appropriate institutional and regulatory set-up and the required benefit sharing mechanisms for REDD+ implementation.

The various assessments specified in 2a and the pilots of strategy options in 2b – especially the pilot related to good REDD+ governance – will feed into and inform the development of the REDD+ implementation framework.

The following analysis is presented in two parts, firstly looking at the broader enabling environment in regard to the governance of deforestation and degradation, and secondly looking specifically at what mechanisms and institutions need to be developed in order to administer and deliver REDD+ implementation.

The enabling environment for addressing deforestation and degradation

During the R-PP development process both an extensive literature review and extensive stakeholder analysis were undertaken on the issue of addressing deforestation and degradation. This section provides an analysis of the current composition of the enabling environment, what gaps exist, and what is recommended to address those gaps and to prepare **the needed strategies, laws, standards, directives or guidelines; as appropriate.**

Policy environment

There are various recent policies that have elements aimed at addressing deforestation and degradation in Ethiopia. Some of the most important are summarised in the following table.

Table 13 Forestry policies relevant to addressing deforestation and degradation

Policy/Proclamation	Level	Attributes of relevance to deforestation and degradation
EPE (1997)	Federal	It ensures the development of agreed partnerships between local communities and the private sector or the state (whichever operates the plantations forest) whereby the community benefits financially and so affords protection to the forest
Forest Development, Conservation and Utilization Proclamation (542/2007)	Federal	It provides various measures that stipulate the engagement of communities in forest management (see details in subsequent text box).
Oromia Forestry Proclamation (72/2003)	Oromia	Provides a definition of forest ownership to cover state and private forest and community forest ownership.
Rural Land Administration & Use Proclamation (No110/2007)	SNNPRS(Also similar proclamations in most other regional states)	Aims at devolving rural land user rights and enables communities to register communal land, which can include forest.

Background: The Federal Proclamation no. 542/2007 provides for the engagement of communities in the management of state forest and in the receipt of benefits from the forest. Provisions include:

• Encouragement of farmers/agro-pastoralists that live within and around protected forest areas, through the grant of permits and technical assistance enabling them to engage in the production of honey, spices, wild coffee and fodder by way of participatory forest development and management (Article 4.2.e)

• For forests that have not been designated as protected or productive state forests management plans shall be developed, with participation of the local community. Such forests shall be given to local community, associations or investors so that they can conserve and utilize them in accordance with directives to be issued by the appropriate body (Article 4.3)

• Forest development, conservation and utilization plans shall be formulated to allow the participation of local communities in the development, conservation and sharing of benefits from state forest development. (Article 9.3).

Box 2 Background information on the Federal Proclamation

It is clear that the policy environment has been shifting in recent years from a centralised regulatory approach to a devolved approach that aims to engage communities and the private sector in forestry management, which importantly allows communities to benefit from forestry (see text box on the Federal Proclamation). The

Rural Land Administration and Use Proclamation also supports devolved forest management for forestry through the granting to communities of communal use rights over forests.

During the R–PP consultations the biggest criticisms of the policy environment came from community representatives who stated that clearer, more secure and more stable forest user rights, ensuring long-term returns, are required in the policy arena in order to motivate them to protect the forest. The policy and regulatory systems put in place at the Federal level will subsequently be regionalised and possibly adapted. In the coming few years some targeted support of these regional policy processes may strengthen the policy environment further.

Another key criticism of the policy environment was contradictory policies creating a double standard. On the one hand some policies aim to protect the forest (usually from poor villagers) while others promote agri-businesses which result in forest clearance (usually by rich investors).

However there was quite a lot of consensus that policies are moving in a direction that will increasingly address deforestation and degradation in more socially acceptable ways than the past. Some stakeholders consulted during the R-PP development felt that REDD+ support would be more effective if it focused on raising awareness of existing policies, whereas others felt that the focus should be on lobbying for the revision of some remaining problematic policy areas. For example, some feel that the overlap between the Rural Land Administration & Use Proclamation and the Forestry Proclamation is causing confusion and that the policies should be harmonized.

The Forestry Institutional Environment

According to Derero et al. (2010) there has never been an all-inclusive discussion on identifying and prioritising strategic interventions in the forestry sector. As a consequence the various GOs, NGOs and private sector organisations in different regions fail to work in harmony in realising a shared vision of sustainable forestry development (Derero et al. 2010). It is clear that the lack of a dedicated forestry institution in Ethiopia, and lack of resources for forestry, are seen as key challenges in successfully coordinating efforts to address deforestation and degradation, and could likewise be a problem in coordinating REDD+ implementation.

The forestry extension service is based under the Ministry of Agriculture and Rural Development. Conversion of forests to agriculture is the primary cause of deforestation, and it was suggested by some participants in the R-PP consultation process that there was a conflict of interest in this set-up. Also, forestry responsibilities in government have suffered from frequent restructuring.

During the R-PP consultation there was also criticism that the government institutions responsible for forestry still practiced a regulatory policing approach to forest management, rather than a service-oriented approach that aims at making forestry management attractive. Concern was expressed during the consultation that a strong but service-oriented federal and regional body is needed.

On the positive side, the majority of R-PP consultation participants saw the development of state-run yet business-oriented Regional Forest Enterprises (see 2a for more details) as a positive movement in the forest sector. These Enterprises will be undoubtedly key players in the administration of REDD+ support in the regions.

Over the last twelve years there has also been development of community-based forest management organisations within various Participatory Forest Management Programmes. These legal organisations sign agreements with the government to manage and benefit from demarcated areas of forest. There are currently 3 types of

community-based organisations involved in forest management (see Table 14 that follows for characteristics of each type), although by far the most common institution type are co-operatives. During the R-PP consultations the key criticisms of co-operatives were that sometimes bureaucracy led to the slow payment of dividends, although it had been recognised that improvements were being made. These community-based organisations will receive REDD+ financial support.

Table 14 Characteristics of current community-based forest management organization types

Attribute	Association	Co-operative	Private Limited Company
Local forest control, protection and sustainable utilisation	Experience of signing community control agreement over forest. Legal authority strong. Suitable for forest protection but not for utilisation of forest products to sell on a sustainable basis.	Experience of signing community control agreement over forest. Legal authority strong. Suitable for both forest protection and utilisation of forest products for sale on a sustainable basis.	Currently project sites are mainly used for trading: buying and selling forest products, ensuring fair prices and cutting out middle men. Currently focused mainly on honey but can trade other forest products.
Credit access	Not applicable as a Not For-Profit organisation.	Can access credit from banks but requires collateral, government support letter and business plan to do so.	Can access credit from banks if collateral is sufficient.
Government requirements and support	Registration previously at regional level recently devolved to Zonal Justice Department. Requires operating licence to be renewed every year. If there is income must be audited every year at cost of association.	One-off registration required with co-operative agency at the co-operative promotions desk at Woreda level. Exempt from having to get a business licence. Government support provided in terms of audit service and other technical support services. Must be audited every year at cost of government – through co-operative promotions desk.	Requires 15,000 Birr initial capital to be allowed to start up. Registration and business licence required from Bureau of Trade and Industry at Regional Level. Business licence must be renewed every year. Annual auditing at cost of organisation. No government support/ training etc.
Modalities	Minimum 2 members, no maximum. New members can join according to criteria set by association but membership not transferable e.g. to children. By-laws largely prescribed not much	Minimum 10 members, no maximum. New members can join according to criteria set by co-operative. Membership can be transferred. Need to form committee according to stipulated positions. There is a standard model for the by-laws but	Between 2 to 50 members. New members can join according to criteria set by the organisation. Membership can be transferred. Need to form a committee with the specified positions.

	flexibility. Need to form a committee with various specified positions.	these can be adapted to the needs of the organisation.	

The following table provides an overview of the key building blocks that will be put in place to develop an effective REDD+ implementation framework during R-PP implementation. In order to set up of the REDD+ implementation framework, Ethiopia will leverage the outcome of the CRGE effort (aiming, among other deliverables, to define and implement a federal and regional institutional set up to develop and implement a sustainable and climate resilient growth) as well as the experience from the pilot projects of component 2-b option 2 (Participatory action research pilot that examines experiences with all REDD+ pilots identifying best practice in cash flow, accounting and democratic decision making etc.). The suggestions are based on the two main themes:

A. Recommendations to improve the enabling environment (policy and institutions) for addressing deforestation and degradation and

B. Recommendations for developing REDD+ delivery mechanisms and institutions.

Developing building blocks for an effective REDD+ Implementation Framework

Table 15 Action plan for development of REDD+ implementation framework

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	**Responsible institutions**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
	A. Recommendations to improve the enabling environment (policy and institutions) for addressing deforestation and degradation. **Note during R-PP+ implementation support outside the REDD+ system will be needed.**					
Forest related policies have changed frequently in the past. They are under revision without adequate representation of forestry professionals	**A.1. Reviewing and revising problem areas and overlaps in policies and laws and making amendments or prepare new ones accordingly.** **Strengthening user rights seems to be a key issue for forest-dependent people in order to motivate them to protect forest resources.**	• Environmental Council with stakeholder input • Ministries (e.g. Transport), IBC, Ethiopian Wild Life Conservation Authority, Migration, FEPA, MoCT, MoA) in close coordination with: • Sector specialist • Research Institutes (e.g. CIFOR, Forest Research Centre) • NGOs could facilitate (in non-partisan role) • EIAR • Experts • grass root stakeholders	• Workshops • Evaluation and ranking of existing policies that impact on forest resources and sustainable natural resource management • Outreach to facilitate stakeholder participation in evaluation / Multi-stakeholder policy processes at various levels • Sector specific policy harmonisation short-list with suggestions for upcoming future policy revisions	• Revised/new policies that will be shaped to fit the functions demanded of them by REDD+ implementation • Policies that provide secure long-term user rights for forest-dependent stakeholders • 'Carbon ownership' is clearly with forest-dependent people	• No. of existing policies and laws revised/shaped • No. new policies and laws established	2011-2012

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	**Responsible institutions**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
		• Oromia Forestry and Wildlife Enterprise (OFWE); Organisation for Rehabilitation and Development of Amhara (ORDA);Relief Society of Tigray • REDD+ Investors	• Consider existing pilots e.g. Oromia forest policy development • Questionnaire-based data evaluation among potential investors • Investment boundary analysis • Expert consultation			
Forestry approaches are lacking coordination across sectors. Forestry matters are spread across different government.	**A.2. Cross sectoral and cross institutional coordination to ensure more coherent and efficient forestry approaches – clarification of roles and responsibilities**	• same as previous Create task force within different ministries (Forestry Research Centre, Ethiopian Wild life Agency, agriculture, FEPA) to identify ways of cooperation and possibilities for re-structuring	• Legal / political recommendation • Evaluation and of existing structures and approaches regarding resources and sustainable natural resource management	**Coherent and efficient forestry approaches** across sectors	• A mechanism/ cross sectoral approach for coordination	2011-2013
Lack of a strong service-oriented forest institution.	**A.3 Setting up a dedicated service oriented forestry institution at Federal and**	• with stakeholder input • Environmental Council with stakeholder input	• Make a need assessment of the different functions that need to be covered by REDD+ and forestry	• Established forestry institution considering the different functions, REDD+,	• A established designated national and regional agencies/	2011-2012

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	**Responsible institutions**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
	Regional level.	• Create task force within different ministries (Forestry Research Centre, Ethiopian Wild life Agency, MoCT, agriculture, FEPA) to identify ways of cooperation and possibilities for re-structuring	institutions. (regulatory, implementation, enforcement, monitoring) different levels • SWOT analysis	biodiversity, wildlife and responsibilities for forest research and management	forest bodies	
Criticism of slow and inefficient realisation of sustainable forest management (e.g. PFM) projects on community level.	**A.4 Strengthening and adapting community level institutions so that they are more suitable for sustainable forest management.**	• Environmental Council with stakeholder input • esearch Institutes (e.g. CIFOR, Forest Research Center) • NGOs could facilitate (in non partisan role) • Grass root stakeholders	• Make a need assessment • SWOT analysis	• Fast and easily accessible support for sustainable forestry projects	• A directive issued (national level) to register/ institutionalize community based PFM organizations • No. CB-PFM organizations created	2011-2012
Concern on ad-hoc fashion in REDD+ development.	**A.5 Raising awareness on policies or initiatives that are relevant to avert deforestation and degradation and**	• Environmental Council with stakeholder input • FEPA • Research Institutes (e.g. CIFOR, Forest	• Outreach to facilitate stakeholder participation in evaluation / Multi-stakeholder policy processes at various	• Strong REDD+ interest group with knowledge on policy backgrounds and implementation framework	• Existence of an elaborate outreach/ consultation-participation plan	2011-2012

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	**Responsible institutions**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
	supporting implementation.	Research Centre) • NGOs could facilitate – in non partisan role • Grass root stakeholders	levels	developments	• No. of consultations /awareness raising programmes • Outreach/ participation tools/ methods employed • Level and comprehensiveness of participation	
Double standard policies, on one hand some policies are aiming at protecting the forest (usually from poor villagers) yet other policies are promoting agri-businesses which result in forest clearance (usually by rich investors).	**A.6. More coherent policy and implementation of social and environmental impact assessments to include large agri-business industrial scale developments in forest areas.**	• Environmental Council with stakeholder input • Create task force within different ministries (Forestry Research Centre, Ethiopian Wild life Agency, agriculture, FEPA) to identify ways of cooperation and possibilities for re-structuring	• Training • Expert consultation • Legal / political recommendation	• Clear strategy of REDD+ Policies. Support channelled to sustainable utilisation of the forest, and effective marketing of forest products to maximise the value of the forest in the eyes of forest-dependent people	• No. of policy issues/ strategies revised/ shaped/new ones established in regard to ESIA of large agri-business	2011-2013

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	**Responsible institutions**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
Lack of integration of past success and failures into policy environment	**A.7 Cross country lesson learning on policy and institutional environments that address deforestation and degradation.**	• Environmental Council with stakeholder input • Research Institutes (e.g. CIFOR, Forest Research Centre) • NGOs • Grass root stakeholders	• Outreach to facilitate stakeholder participation in evaluation / Multi-stakeholder policy processes at various levels • Facilitation of information exchange across organisations.	• REDD+ process optimisation through integration of lessons learned	• Outreach plan to bring on board wider stakeholders • No. of participatory policy evaluation engagements • No. of lessons gained	2011-2013
	B. Recommendations for developing REDD+ delivery mechanisms and institutions.					
No administration framework for REDD+ exists to date.	**B.1. A special structure to administer REDD+ will be developed. Options at Federal level and Regional level should be considered. Tasks include: administering an effective REDD+ implementation framework,**	• REDD management arrangements including **RSC and RRSCs and secretariat.** • Research Institutes (e.g. CIFOR, Forest Research Centre) • NGOs could facilitate – in non partisan role • Grass root stakeholders		• Increasing funds for projects • Micro-scale co-benefit project boom	• A designated national body for REDD+ • Designated regional REDD+ coordination units	2011-2012

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	**Responsible institutions**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
	developing and efficient system with low transaction costs and streamlined bureaucracy. **Ethiopia will seek and leverage learning from other countries already more advanced in the REDD process**					
No financial management system and benefit sharing framework for REDD+ exists to date.	**B.2. Development of an accountable, performance based and transparent financial management that would also include internal audit system. This will enable the development of a transparent and user friendly accountancy system for REDD financial administration.** **Ethiopia will seek**	• REDD+ management arrangements including **RSC and RRSCs and secretariat.** • Research Institutes (e.g. CIFOR, Forest Research Centre) • Requires inputs of all stakeholders to develop an acceptable, transparent mechanism • Facilitated by NGOs, multi-stakeholder consultation.	• Multi-stakeholder policy and institutional review of current financial management processes will be conducted • Outcomes will be revised/new institutions and policy that will be shaped to fit the functions demanded of them by REDD+ implementation • Consider compliance with	• A workable financial management system, feasible mechanism for REDD+ money flow, benefit sharing and accountancy that is effective, transparent and acceptable to all stakeholders • Clear rules and regulations enshrined in law that are acceptable to all	• Existence of an effective and transparent financial management system • A dedicated and legally issued benefit sharing mechanism	2011-2012

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	Responsible institutions	Method	Outcomes	M&E key indicators	Timing
	and leverage learning from other countries already more advanced in the REDD process		possible obligations under a future UNFCCC REDD+ need to be ensured • Rules and regulations developed through pilots(2b)	stakeholders		
Weak organisational background for forest policy development and implementation. Lack of capacity and outreach of existing forestry institutions and REDD+ stakeholders.	**B.3. Set up of institutions with special tasks including Social and Environmental Impact assessment of REDD+ support and Carbon Stock MRV.**	• Requires inputs of all stakeholders to develop an acceptable, transparent institutional framework	• Multi-stakeholder policy and institutional review of current REDD+ governance structures • Same as previous points 2-4	• Establish sound R-PP implementation capacities organised in sub-units and groups with specialised tasks	• Dedicated units of REDD+ strategy, outreach, ESIA, MRV and M&E units within the overall REDD+ institutional set-up • Institutional strength of units	2011-2012
Unclear where and how REDD+ mechanisms and institutions currently conform existing accounting	**B4. Set up of a separate agency/group to check the accounts of REDD+ money flows. The Auditor General**	• Government with stakeholder input	• Strengthen the role of the Auditor General's office and its regional equivalent to have an oversight role regarding the cash	• Checks and balances to ensure transparent accountability, respect for anti-corruption laws	• A defined role of AG office (national and regional) for REDD+ accountancy	2011-2012

Gap / Challenge Analysis		Developing building blocks for an effective REDD+ implementation framework				
	Action	**Responsible institutions**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
standards	**Office will annually audit the financial flow, as is the norm with all funds transacted by a sector agency**		flow of REDD+.	and measures, national best practices for fiscal transparency • Clear roles and responsibilities respected within a decentralised forest management system	• Roaster of auditors for REDD+ accountancy	
Lack of knowledge transfer and establishment of common perspectives on REDD+.	**B.5. Cross country learning on best practice in REDD+ administration**	• All stakeholders	• Outreach to facilitate stakeholder participation in evaluation / Multi-stakeholder policy processes at various levels	• Best practice oriented sound REDD+ development	• A dedicated outreach plan/knowledge sharing mechanism	2011-2012
Absence of a National Carbon Registry	**B.6 Establish a web based Carbon Registry**	• EPA, EICTDA, MoA, MoTI, Chamber of Commerce, ETA	• Stakeholder consultation, use of renowned software and Information Communication and Technology tools	• Web based platform for carbon accountancy	• A dedicated web based carbon registry for Ethiopia	2011 - 2012

Budget

Table 16 Summary of Implementation Framework Activities and Budget

Summary of Implementation Framework Activities and Budget						
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands USD)**				
		2011	**2012**	**2013**	**2014**	**Total ($)**
Supplemental improvements to the enabling environment (policy, legal and institutions) for addressing deforestation and degradation.	A.1. Reviewing and revising problem areas and overlaps in policies, laws and making amendments or preparing new ones accordingly.	50	20	-		**70**
	A.2. Cross sectoral and cross institutional coordination to ensure more coherent and efficient forestry approaches – clarification of roles and responsibilities	30	15	15	-	**60**
	A.3 Setting up a dedicated service oriented forestry institution at Federal and Regional level.	90	70	20	-	**180**
	A.4 Strengthening community level institutions.	140	70	35	-	**245**
	A.5 Raising awareness on recent policies related to deforestation and degradation and supporting implementation.	60	40	20	-	**120**
	A.6 Cross country lesson learning on policy and institutional environments that address deforestation and degradation.	30	20	10	-	**60**
Supplemental improvements for developing REDD+ delivery mechanisms and institutions.	B.1. A special structure to administer REDD+ will be developed. Options at Federal level and Regional level should be considered.	160	80	20	-	**260**
	B.2. Development of a sound financial management system that ensure transparency, smooth and timely flow of disbursements of funds.	30	15	5	-	**50**

Main Activity	Sub-Activity	Estimated Cost (in thousands USD)				
		2011	2012	2013	2014	Total ($)
	B.3. Set up of mechanisms to undertake Social and Environmental Impact assessment of REDD+ support and Carbon Stock MRV.	50	40	10	-	**100**
	B4. Set up of a mechanism to check the accounts of REDD+ money flows.	40	30	10	-	**80**
	B.5. Cross country learning on best practice in REDD+ administration	30	20	10	-	**60**
	B.6 Establish a web based Carbon Registry	40	20	-	-	**60**
Total		**750**	**440**	**155**	**-**	**1345**
Government		65	30	-	-	**95**
FCPF		100	55	10	-	**165**
UN-REDD Programme		205	100	50	-	**355**
Nordic Climate Facility-NCF		300	200	80	-	**580**
French Development Agency-AFD		80	55	15	-	**150**

2d. Social and Environmental Impacts

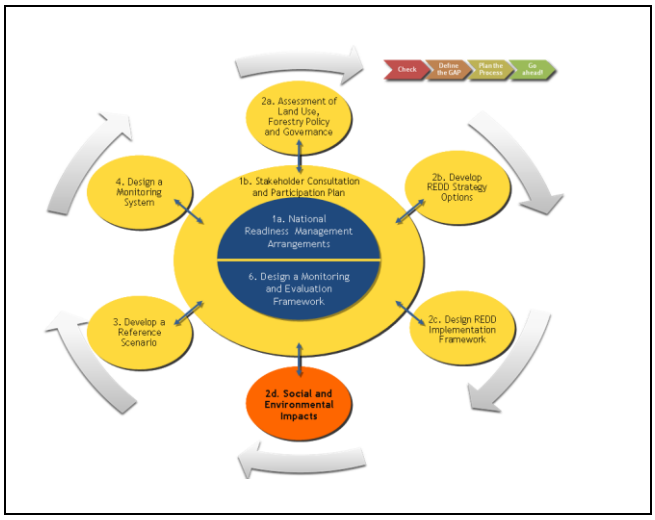


Figure 19 Component 2d in the REDD readiness wheel

Strategic Environmental and Social Assessment (SESA) mechanisms are analytical and participatory approaches that aim to integrate environmental and social considerations into policies, plans, programs and projects to evaluate their connections to economic considerations. They provide a safeguard to ensure that REDD+ supported activities maximise beneficial social, cultural, economical and environmental impacts, whilst avoiding or mitigating harmful impacts. The safety net of SESA is particularly important in Ethiopia where many marginalised groups and especially women are dependent on the natural forest resources for their livelihoods. REDD+ supported activities will target these resources.

As is highlighted in the diagram at the beginning of subcomponent 2a, social and environmental impact mechanism development will be integrated with subcomponents 2a, 2b and 2c. This is to ensure that assessments (2a), strategy (2b), and the development of the implementation framework for REDD+ (2c) will all have SESA safeguards built into them as they are developed - not as an afterthought.

The development of these cross-cutting safeguards will take the form of an Environment and Social Management Framework (ESMF). The ESMF will ensure compliance of proposed REDD+ activities with World Bank Safeguard policies, as ESMF contains an Environmental Management Framework which will comply with various World Bank Operating policies - most notably OP 4.01 on Environmental Evaluation, OP 4.04 on Natural Habitats and OP 4.36 on Forests. It will also contain a Social Management Framework which will adhere to the World Bank's Indigenous Peoples policy (OP 4.10). This ESMF will pay particular attention to the 'Do No Harm' safeguards related to the restriction of use of resources or resettlement (relevant policies contained within OP 4.12). The ESMF however will combine international standards with tried and tested Environmental and Social Safeguards that have already been developed domestically in Ethiopia.

The Terms of Reference and action plan in this section describes the process of developing the ESMF.

Terms of Reference

The objectives of this subcomponent's proposed activities are:

a) Develop an effective ESMF nested within international and national laws, that builds on international and national guidance and best practices;

b) Assess possible environmental and social impacts of future REDD+ activities, and

identify measures to mitigate or avoid negative impacts while promoting positive impacts; and

c) Enhance capacity within Ethiopia to develop and implement a REDD+ ESMF.

Regarding a) an example of the REDD+ best practice standards that will be referred to and that will be adapted to fit within the context of Ethiopia includes the recently drafted REDD+ Social and Environmental Standards (www.climate-standards.org/REDD+). These standards include various principles, criteria and indicators that were developed through expert and community level consultations. The key principles in these standards are adapted to the Ethiopian context below:

1. Rights to forest resources, including customary claims by forest dependent people, are recognised and respected by the REDD+ programmes.
2. The benefits of the REDD+ programme are shared equally among all relevant rights holders and stakeholders.
3. The REDD+ programme improves the long-term livelihood security and well-being of local forest dependent communities with special attention to vulnerable groups: women, marginalised ethnic groups, etc.
4. The REDD+ programme contributes to broader sustainable development and good governance objectives.
5. The REDD+ programme maintains and enhances biodiversity and ecosystem services.
6. All relevant rights holders and stakeholders participate fully and effectively in the REDD+ programme.
7. All rights holders and stakeholders have timely access to appropriate and accurate information to enable informed decision-making and good governance of the REDD+ programme.
8. The REDD+ programme complies with all applicable local and national laws and international treaties, conventions and other laws/policies/treaties.

Process/approach considerations

Building on from what exists

In addition to international best practises, there are also various examples within Ethiopia that will be used as starting point in creating a REDD+ framework. The FEPA has developed a set of environmental impact assessment guidelines which will be reviewed to asses which aspects are relevant and can be adapted to a REDD+, SESA, ESMF.

The Government of Ethiopia and the donor partners of the Productive Safety Net Program (PSNP), including the World Bank, have undertaken an Environmental Impact Assessment (EIA) on the programme. This included social aspects with the aim of generating lessons to build sustainable community assets. In addition to this there are various EIA and social impact studies from different projects which will also be reviewed.

Of more direct relevance to REDD+ are a number of studies in the Bale Mountains on the feasibility of forest carbon activities. These studies included elements of social and environmental impact assessments and have been completed as part of a REDD+ pilot project development by the implementing NGO: Farm Africa- SOS Sahel. This pilot project has carried out a legal due diligence report including information on the ownership of emission reductions. This NGO has also undertaken feasibility studies for the Bale REDD project for

which they modelled household use of forests (e.g. biomass needs) so that a baseline for social impacts can be developed.

Under the CDM mechanism the Humbo Natural Regeneration project, run by the local community and mediated by World Vision Ethiopia, and a grass land carbon sequestration project, ran by Save the Children US, both conducted various environmental and social feasibility assessments. This has generated many useful lessons - not only in terms of the findings of the social and environmental impact assessments, but also with regards to designing and implementing appropriate mechanisms for impact assessment.

The forest regeneration through local community led area closure in northern Ethiopia first pioneered by the institute of sustainable development (ISD) and the bureau of agriculture of Tigray has been based on the respective community's wish for environmental rehabilitation coupled with improved socio-economic conditions as experienced by the by laws of each local community and thus integrate environmental and socio-economic dimensions

Participatory piloting approach

The social and environmental principles, criteria, indicators, and methods that make up the components of the ESMF guidelines will be developed by and with the involvement of forest dependent people through pilot projects. Pilots will be based around various pertinent topics, but fundamentally the cost burden of forest-dependent households needs to be further researched. This is important, particularly in order to implement the 'do-no-harm' principle and avoid exacerbating existing inequalities. The pilots will be extremely important for several reasons. On-the-ground effectiveness and equity impacts of REDD+ policies are to some extent unpredictable. Information on these effects will need to be fed back into implementation so that REDD+ strategy options (see section 2b) and the policy and institutional framework can be improved on a continuous basis.

Expected outcomes

The following outcomes will be achieved during the implementation of the Terms of Reference:

- A comprehensive yet user friendly ESMF that, when applied, can effectively:
  - identify, prevent or mitigate negative impacts of REDD+ activities;
  - identify ways to maximise benefits with regard to social, cultural and economic well-being of particularly forest dependent populations and marginalised groups within these populations;
  - identify, prevent or mitigate any negative impacts on the forest biodiversity and wider ecosystem.
- Strengthened institutional and individual capacity to develop and implement the ESMF effectively.
- An assessment or screening of the various REDD+ strategy options being pilot tested according to the principles, criteria and indicators of an ESMF. This will include a thorough and disaggregated stakeholder analysis related to Social and Environmental impacts of REDD + activities that highlights the risks, possible negative and positive social impacts and any necessary relevant mitigation strategies.
- Action plan/process for the development of the ESMF

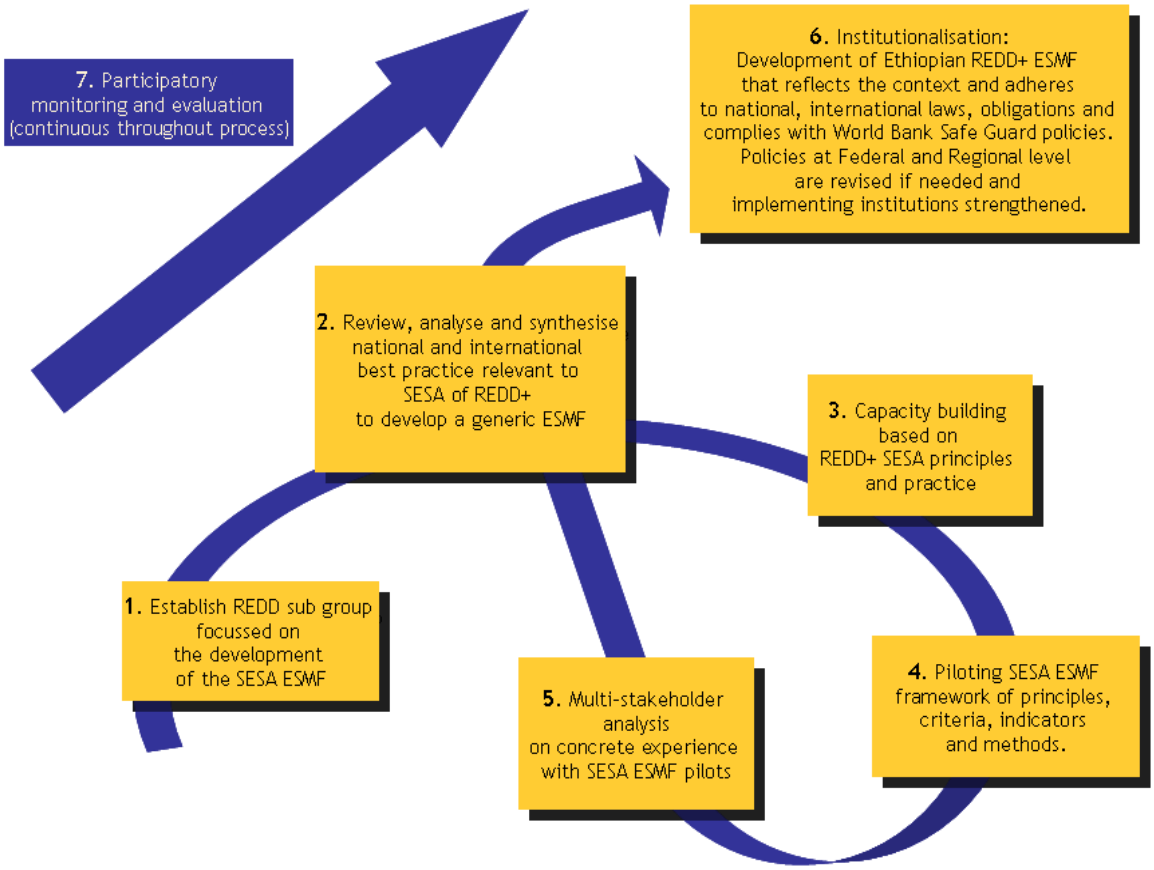


Figure 20: Key process steps in the Environmental and Social Impact Framework development action plan

The process described in Figure 20 is a guide for the development of the ESMF through a participatory action learning approach. This ensures that the final Ethiopian SESA ESMF grows from practical experience, and is catered to local needs and context, and the participatory nature of the process ensures the voices of all key stakeholders are heard in its development.

Table 17 Action plan to develop the environmental and social management framework

Gap / Challenge Analysis	Action plan to develop the environmental and social management framework					
	What action	Responsible	Method	Outcomes	M&E key indicators	Timing
Need a multi-stakeholder/ disciplinary sub group of qualified people to exchange ideas and work together to coordinate the development of the SESA ESMF	**1. Establishing a REDD+ technical sub-group focussing on the development of the ESMF**	• Group should include FEPA, MoCT, MoA-NRMD • Regional Environmental Protection Offices, Private Sector, Academia, NGOs (particularly those engaged in REDD+ pilots), and representation from Community Based Organisations or organisations that work directly with communities. • Multi-disciplinary representation from social sciences and natural resource sciences	• Terms of Reference for the sub working group are drafted by the Technical Working Group. • Potential stakeholders are identified and invited to a workshop where the best candidates that fit the requirements on the TOR are identified and nominated to the committee. Action plan developed and roles and responsibilities assigned	• Well qualified technical sub -group established and action plan developed	• A dedicated SESA-ESMF technical sub-group • Sub-group composition and qualification	2011
Need to ensure that all relevant lessons in best practice REDD+ SESA internationally	**2. Review, analysis and synthesis of national and international best practice relevant to**	• Can be conducted by SESA technical sub group with support from national and international consultants	• Literature review and interviews. Various relevant lessons exist within Ethiopia which will be harnessed - for	• Best practice synthesised and generic ESMF developed, ready to be tested in subsequent steps	• No. of international and national lessons/best practices reviewed and analysed to	2011

Gap / Challenge Analysis		Action plan to develop the environmental and social management framework				
	What action	**Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
and nationally are harnessed, to avoid re-inventing the wheel.	**SESA of REDD+ to develop generic ESMF**		example from the HUMBO CDM Bio-Carbon fund project, the Bale REDD project, ISD's area closure and various other REDD+ pilots in the country. A learning workshop will be held.		establish SESA-ESMF • A comprehensive ESMF for REDD+ Ethiopia • ESIA checklists	
Lack of capacity on the new and cross-sectoral aspects of a REDD+ SESA, particularly a lack of expertise on the monitoring and evaluation of socio-economic and cultural impacts of REDD+	**3. Capacity building conducted on REDD+ SESA principles and practice**	• Contractor hired by SESA technical sub group who best meets the requirements to offer this capacity building. Might be a team of national and international consultants working in partnership with relevant GO, Academic, and NGO organisations in the country • First target of the capacity are the SESA technical sub group, key people in the Technical	• Capacity building will take different forms: short intensive trainings interspersed with field work and on the job training that are fully integrated with actions of REDD+ pilot implementers. • The training will also cover the participatory methods relevant to SESA (see subcomponent 1b)	• Full set of training materials. • Fully capable teams of people with expertise in SESA. • Action plans developed as a result of the training to implement SESA Framework pilots including methods and toolboxes for application/testing.	• No. and quality of training materials • No. of TOT given • No. of people trained/level of expertise of trainees on SESA • Action plans for piloting SESA	2011

Gap / Challenge Analysis		Action plan to develop the environmental and social management framework				
	What action	**Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
		Working Group and Steering Committee as well as NGO implementers of REDD+ pilots and their counterparts in government.				
As REDD+ is new there is a need for an experimental approach to the development of the mechanism	**4. Pilot on an experimental scale: the SESA analysis and methodology pilots to develop/test/ contextualise the ESMF framework of principles, criteria, indicators and methods.** **Setting up participatory action research pilots, testing methods around existing REDD+ pilots**	• Small multi-disciplinary teams with multi-stakeholder representation will be set up to oversee the SESA analysis and piloting with hiring of national and possibly international consultants to oversee the process. • Funds will be distributed as grants with clear TORs to the existing REDD+ pilots to support them to develop and test a SESA ESMF.	• Existing REDD+ pilot sites will be targeted. There will be consideration according to socio-economic and ecological stratification to achieve a good representation of sites with different conditions • A thorough stakeholder analysis and engagement plan will be developed for each pilot/site with particular emphasis on engagement of highly affected marginalised	• Social and environmental risk and (potential) impact assessment conducted at all existing REDD+ pilot sites.This screening of REDD+ strategy options will help identify which strategies have the most positive impact and lowest risks related to social and environmental factors, and which have the least positive impact and highest risk – this information feeds into decision making in components 2b and 2c. • SESA ESMF framework (including principles, criteria, quantitative & qualitative indicators)	• No. of SESA pilot undertakings to fine-tune the ESMF • No. of strategic options screened according to their level of impact • No. established SESA ESMF principles, criterias, quantitative and qualitative indicators due to pilots • No. Decisions made on REDD+ strategy options and implementations framework	2011 - 2013

Gap / Challenge Analysis		Action plan to develop the environmental and social management framework				
	What action	**Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
	Developing baselines before any new pilot REDD+ projects will be implemented.		stakeholders in the testing of the SESA Framework. • Workshops to bring stakeholders from various pilots together to discuss and share experiences with SESA development	tested/developed through experimentation on the ground. With key stakeholders involvement ensuring ownership.	(Comp.2b&2c) • No. and quality of action research conducted • Magnitude and quality of baseline information collected	
Need to ensure that initial experiences with ESMF are assessed rigorously by all key stakeholders and according to different multi-disciplinary criteria.	**5. Multi-stakeholder analytical reflection on concrete experience with SESA framework testing and methods & pilots.**	• Facilitated by a small multi-stakeholder team (see above) but with representation in the workshop from all key stakeholders involved in the piloting of the SESA ESMF framework.	• Participatory multi-stakeholder workshop.	• Full critical analysis of the pilot experiences.	• No. of pilots analyzed • Level of participation/ representation during SESA-ESMF piloting • No. of workshops/ meetings held	2013
No national level REDD+ SESA ESMF.	**6. Development of an Ethiopian**	• The SESA technical sub group. Support may be provided by international and	• Literature review, interviews and various technical workshops where	• The agreed Ethiopian national SESA ESMF (with principles, criteria, indicators and	• A dedicated SESA-ESMF for REDD+ in Ethiopia with	2013

Gap / Challenge Analysis		Action plan to develop the environmental and social management framework				
	What action	**Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
	REDD+ ESMF that reflects the local context, is acceptable to all key stakeholders, and is user friendly and adheres to national and international laws and obligations, and complies with World Bank Safe Guard policies. **Develop the appropriate institutional arrangements to implement the SESA ESMF during the REDD+**	national consultants and FCPF. • High level political input may be necessary if the finalised national ESMF has any policy or institutionally related ramifications. • The REDD+ steering committee is responsible for formalising the SESA sub unit.	drafts are reviewed and revised. • The final draft should be reviewed in a large participatory workshop with all key stakeholders represented. • As part of this review the form and function of the SESA sub unit will be determined.	operational guidelines) developed and any revisions in national regional policy to accommodate it made • The ESMF documentation14 The system reviewed and corrective actions taken if needed	criterias, indicators/check lists, guidelines, etc • A formally established SESA unit within REDD+ institutional set-up	

[14] The ESMF documentation will have various forms: user friendly guidelines, posters, and leaflets written with visualisations and in different languages to make them as accessible as possible. These documents will be used in the implementation phase and application of the ESMF will be mandatory in all REDD+ activities in the country.

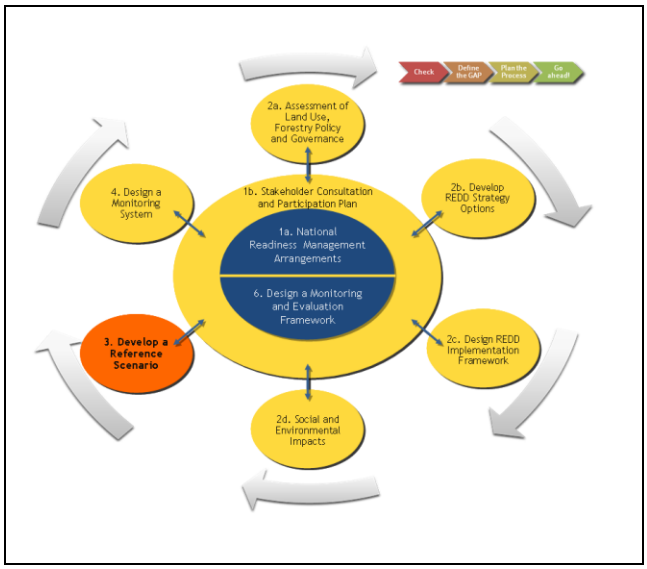
Gap / Challenge Analysis		Action plan to develop the environmental and social management framework				
	What action	**Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing**
	implementation phase.					
Need to have continuous monitoring and evaluation of the implementation of this action plan so that lessons can be learned and adjustments made quickly.	**7. Participatory Monitoring and Evaluation (continuous throughout the ESMF development process).**	• The PM and E can be facilitated by the responsible SESA technical sub group but must involve all key stakeholders.	• At the end of every activity with stakeholders, feedback must be sought using various suitable PM and E methods. See participatory methods toolbox in subcomponent 1b for suitable methods.	• Quality control of the implementation of this action plan, ensuring that continuous adjustments are made if problems are detected. • Continuous stakeholder feedback also ensures increased ownership of the ESMF development process.	• No.and frequency of M&E conducted • Adjustments done due to M&E • No. of feedbacks received from stakeholders • Level of quality of SESA-ESMF work attained • M&E tools used	2011-13

Budget

Table 18 Budget Summary of Social and Environmental Impact Assessment

Summary of Social and Environmental Budget					
	Estimated Cost (in thousands USD)				
Key action	2011	2012	2013	2014	Total
1. Establish REDD+ sub group focussing on the development of the SESA ESMF	15	5	-	-	20
2. Review, analysis and synthesis of national and international best practice relevant to SESA of REDD+ to develop a generic ESMF	40	10	-	-	50
3. Capacity building conducted on REDD+ SESA principles and operation.	100	20	-	-	120
4. Piloting SESA analysis and methodology to test the generic ESMF framework principles, criteria, indicators and methods	60	40	20	-	120
5. Multi-stakeholder analytical reflection on concrete experience with SESA analysis and methods pilots.	-	10	30	-	40
6. Development of a national Ethiopian REDD+ ESMF that reflects the contexts and adheres to national, international laws, obligations and complies with World Bank Safe Guard policies. Preparation of associated awareness materials.	-	10	60	-	70
7. Participatory Monitoring and evaluation(continuous throughout SESA ESMF development)	20	20	20	-	60
Total	235	115	130	-	480
Government	15	10	10	-	35
FCPF	60	20	30	-	110
UN-REDD Programme	70	35	35	-	140
Nordic Climate Facility-NCF	80	40	45	-	165
French Development Agency-AFD	10	10	10	-	30

Component 3: Develop a Reference Scenario



Goal, Objectives and Outcomes

The overall goal of this component is to develop a scenario for the reference level that projects emissions and removals of CO_2 into the future without REDD+ incentives.

This component involves developing a reference scenario of carbon stock and making projections for the future. We focus on the estimated amount of carbon stock loss that can be avoided due to the avoided deforestation and forest degradation that REDD+ contributes. This is the baseline to measure the success or failure of the REDD+ supported strategies that are discussed in Component 2.

Figure 21: Component 3 in the REDD readiness wheel

The objectives of this component are:

· To Quantify historic emissions/ removals from deforestation and forest degradation to produce estimates of historic CO2 emission levels for the proposed period post 2000 to 2010+ at national and sub-national (National Regional States) scale, using the IPCC framework, and spatially represented to reflect differences; and

· To develop future trajectories of emissions/removals over different time periods and under different economic and development scenarios. This will take into consideration such factors as Ethiopia's Vision of developing a Carbon Neutral and Climate Resilient Economy in 2025.

The reference scenario will be developed based on international best-practice, harnessing existing in-country experience with REDD+ and CDM pilots and building on the experience gained using GIS and forest inventories combined with innovative approaches taking participatory inventories and ground truthing by working closely with forest-dependent communities.

REDD+ baselines are essential as they provide a reference against which emissions performance can be assessed. There will be an informed decision whether REDD+ baselines /reference levels could be established either at the national accounting level and/or at the sub-national (including project) accounting level. From an environmental perspective, the baseline accounting level has implications for carbon leakage. The analysis and the decision making process will therefore take into account compliance with the relevant international requirements set in connection with carbon leakage. In this connection Ethiopia needs to prepare guidelines or methodologies that aim to promote co-benefits and climate benefits while avoiding leakage within its REDD+ system.

The Reference Emission Levels and Reference Levels at a Federal and national regional state levels are key elements to:

i. Define and quantify the mitigation objectives that Ethiopia would like to reach through the Implementation of REDD+;

ii. Measure the performance of REDD+ policies and actions. In doing so, Ethiopia will have to start to establish its national REL and RL. Once the national REL and RL are defined and approved by the UNFCCC, Ethiopia will have started by defining a national strategy for REDD+ implementation according to possible and potential emission reduction and removals enhancement targets.

Ethiopia's Plan of Sustainable Development Trajectory

Ethiopia is one of the least developed countries. However, its economic growth since 2003 has been averaging about 11% per year and now, because of its large population of over 80 million, it has the biggest economy in eastern Africa. Its plans are to double its present GDP by 2016. Of greater relevance in the present context, it has planned its economic growth to be based on renewable energy and thus to achieve a zero% net emission by 2025. In order to do this, it aims for tier 2 emission quantification by 2015 and a tier 3 by 2020. Between 2011 and 2015, it plans to develop the requisite human capacity and to try out using all available information and methodologies tier 2 emission estimates of all of its economic sectors.

IPCC good practice guidance

Quantification of emissions and removals of CO2 from deforestation and forest degradation is necessary to produce estimates of historic CO2 emission levels. This requires knowledge of two parameters: (i) the area of lands that have undergone change over a known time frame and (ii) the change in carbon stocks on the lands that have undergone change.

*C stock change = Activity data * Emission factor (kg C/ha)*

The Intergovernmental Panel on Climate Change Good Practice Guidance (IPCC-GPG) refers to the two basic inputs with which emissions and removals of carbon (as carbon dioxide) are estimated, namely activity data and emission factors. Activity data in the REDD+ context would refer to the real extent of an emission/removal category—e.g., in the case of deforestation it refers to the area of deforestation, presented in hectares, over a known time period. Emission factors refer to the emissions or removals of carbon per unit activity—e.g., metric tons of carbon per hectare emitted or sequestered.

The IPCC guidelines describe three different levels of detail for estimating C stock changes called Approaches for Activity Data and Tier levels for Emission Factor Data (Table 19)

Table 19

Table 19 Levels of detail for estimating C stock changes

Level of detail	Activity data (area)	Emission factor (carbon stock)
Approach 1 / Tier 1	National statistics, no information on conversions (FAO-FRA country report)	IPCC default factors
Approach 2 /	Tracking of conversions between land-use categories (between 2	Country-specific data for key factors between the two points in

Tier 2	points in time)	time
Approach 3 / Tier 3	Spatially explicit tracking of land-use conversions over time	Detailed national inventory of key C stocks
	Regular (usually annual) monitoring	Regular (usually annual) monitoring

There is general consensus that only Approach 3 or tier 2, based on remote sensing techniques coupled with ground verification, will provide activity data of sufficient quality and that is why that Ethiopia aims at Tier level 2 for its emission factors by 2015. Ethiopia will thus go for a step-by-step inventory compilation.

Agriculture, forestry and other land uses (AFOLU) definition for Ethiopia

Though in the present context Ethiopia's aim is REDD+, its overall aim is to include all its economic sectors so as to achieve its 0% emission target by 2025. Therefore, REDD+ has to be seen as a component part of this overall aim.

Ethiopia defines four classes of forests, which may be subdivided again according to crown cover or stem density (WBISPP, 2004) (Table 20). There has not as yet been a measurement of all its grasslands and wetlands. This has to be done in the next few years. The extent of its agricultural land, though varying from year to year, is assessed annually by the Statistics Agency.

Table 20 AFOLU **classification**

National class	Definition
High Forest	includes Upland Dry Evergreen Forests (Juniperus procera), Mixed Juniper-Podocarpus Upland Evergreen Forest, Mixed Juniper-Podocarpus Upland Evergreen Forest, Humid Upland Broadleaved with Podocarpus, Humid Upland Broadleaved with Aningeria dominant and Riverine Forests, which are sub divided into closed (80%), dense (50-80%) open (20-50%) based on the crown cover of the upper stratum.
High woodland	Combretum-Terminalia wood land with trees >5 m and crown tree cover >20%. It is found in East and West Wellega, Jima & Illubabor zone of Oromia region, in zone 2 of Gambella Region, all of Benshangule-Gumuz Region, and west Gojam, Awi and north Gonder zone of Amhara region and West Tigray. In other areas, it is woodland lying above 1250m above sea level. This class does not include shrubs and bushes.
Low woodland	All other woodlands and shrub lands <5m in height and with crown cover >20%
Plantation	Mainly Eucalyptus, Cupressus and Pinus plantation with >5 m and crown density >20%
lowland grassland about 700 m.s.l	all the more or less treeless grassland (except where the alien invasive tree, Prosopis juliflora, has taken over), use of transhumant pastoralists mostly along the east (Afar and Somali Regions) and south (Oromia and Southern Region), but also along the west in Gambella, Ben-Shangul

	Gumuz, Amhara and Tigray).
High mountain grassland	Scattered in all the regions of the central highlands (Oromia, Southern Region, Amhara and Tigray), used by sedentary or semi-sedentary pastoralists
Rain fed agricultural lands, often with supplementary small-scale irrigation. irrigated large scale lowland agricultural land	Mostly along the Awash River in Oromia and Afar Regions, but expanding also to other regions.

Monitoring of drivers and activities

One of the main goals of developing the reference scenario is to get more insight in to the drivers of deforestation and forest degradation and to quantify them in terms of acreage (hectares) and carbon stocks (ton C/ha). In Table 21 the direct drivers, mentioned in Component 2a, are converted in activities, which can be monitored and quantified in such a way. A qualitative indication is given of the relative importance of the activity for deforestation and forest degradation in Ethiopia. The ultimate goal is to do this analysis in a quantitative way. Regional differences of among the impacts of different activities should be taken into account.

Table 21 Qualitative impact assessment of drivers and activities affecting deforestation and forest degradation

Direct Driver	Activity Processes	Deforestation	Forest Degradation
Population growth in forest areas	Expansion of traditional agriculture	Large impact	Low impact
Large-scale investment	Expansion of large scale development activities	Large impact	Low impact
Population growth in forest areas	Settlement programs	Large impact	Low impact
Population growth in forest areas High wood energy demand	wood extraction & other forest products collection	Low impact	Large impact
Live stock and fire combined no incentives to protect forest land	Forest fires	Medium impact	Medium impact

Available data

To establish a reference scenario of the carbon stock (= forest area x emission factor), at least two points in time should be known; one being a historical and the other a recent point in time.

The stakeholder consultations during R-PP development revealed that several historical datasets are available for forest cover and a number of recent project activities on carbon monitoring are taking place that might be used in setting up a REDD+ reference scenario. Table gives an overview of available datasets. Although in many aspects fragmented, many projects might provide relevant information for carbon stock estimation. In most cases, only specific regions of the country and/or certain tree/forest types were/are subject of the research

The Woody Biomass Inventory and Strategic Planning Project (WBISPP) made a comprehensive analysis of all forest resources over the entire country and might be used as a historical reference point.

The four ongoing projects most advanced in reference scenario development, the Non Timber Forest Product - Participatory Forest Management (NTFP-PFM) project, the Humbo CDM reforestation project, the Bale Mountains National Park (BMNP) and the Bale Eco-Region Sustainable Management Project (BERSMP)), provide useful data/methods/links for the recent reference point. Two of them are located in and around the Bale mountains in Oromiya region and the other two are located in the SNNPRS.

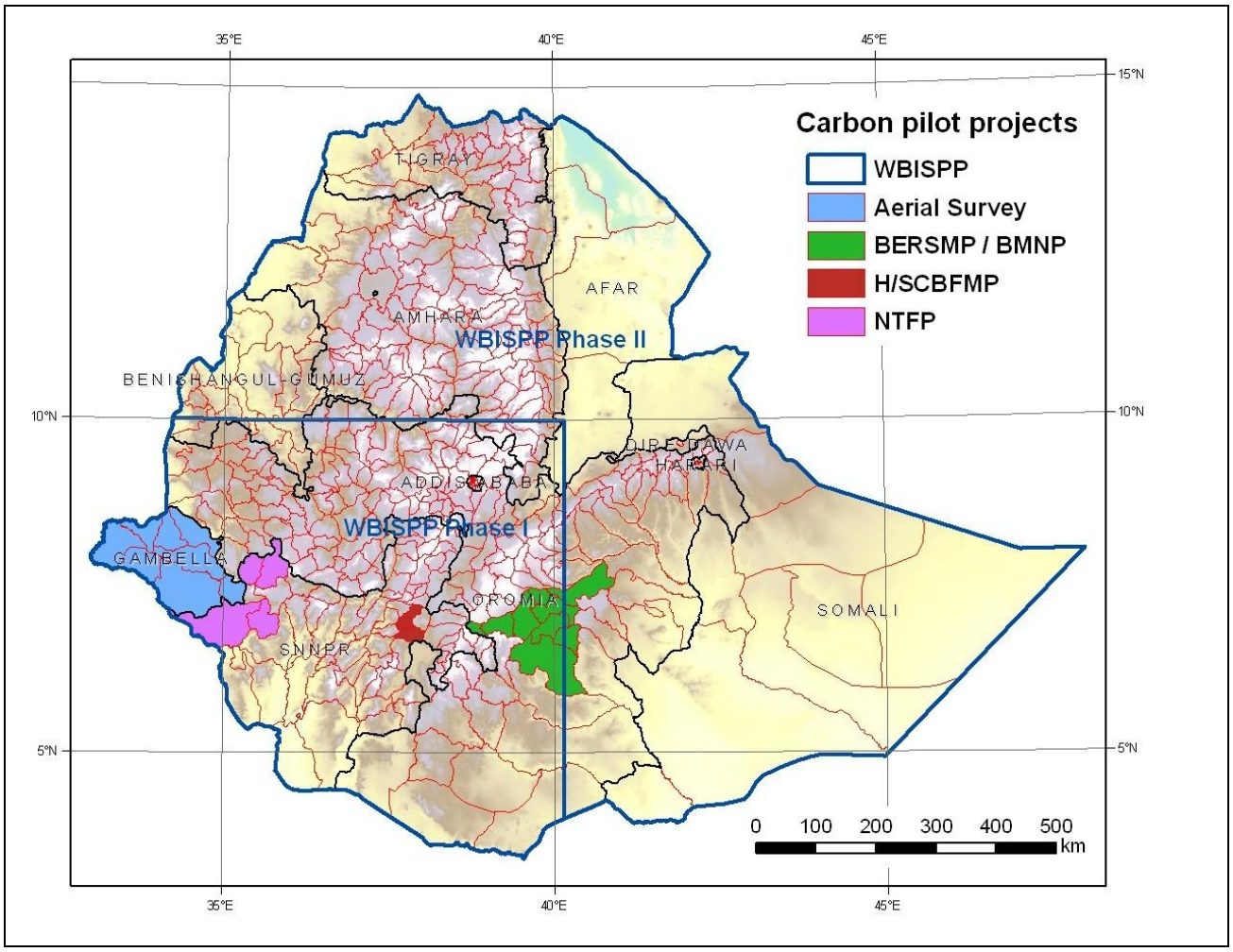


Figure 22 Map of Ethiopia indicating woredas (districts) with forest management projects, which include a carbon accounting component.

Data Quality

To make use of existing data sources for the reference scenario, the quality of these data should be checked on consistency. The following table gives typical questions to be raised about the quality of historical data sets.

Table 22 Quality assessment of historical data sets

Data source	Key quality issues
Activity data	Are the land cover classes and/or forest typologies consistent over time and between different data sources?
	Are the processing steps and results documented?
	Is a validation performed? How?
Emission factors	Is the stratification process of the carbon pools in line with the land cover classes of the activity data?

Is the sampling method (location and number of samples and plots) statistically sound enough to give reliable emission factors?

Is the sampling method and plot locations documented?

Are the raw surveying data available?

Woody Biomass Inventory and Strategic Planning Project (WBISPP)

In 1984 a joint World Bank/UNDP Energy Sector study identified the unsustainable consumption of fuel wood, increasing deforestation and soil erosion as major environmental and economic problems facing Ethiopia. In order to obtain a clearer picture of the status and potential supply of woody biomass as fuel, the Government of Ethiopia embarked up on the Woody Biomass Project. During the two phases of the project, land cover of the whole country was mapped on the basis of Landsat satellite images and forest inventories were carried out.

Land cover mapping

In Phase I of the project (1989-1995), the South Western part (South of 10°N and West of 40°15'E) of the country was mapped on the basis of visual interpretation of hardcopy Landsat images taken during the years 1986 to1989 with path numbers 167-172 and row numbers 53-58. (WBISPP, 2004).The resulting mapping units are polygons at a scale 1:250,000.

Phase II lasted from 1999-2005 and covered the rest of Ethiopia. Landsat images from the period 1995-2000 were used for digital land cover classification, resulting in high resolution raster based maps.

The land cover is classified into 11 major classes which are divided in 52 sub-classes. The dominant land cover types in Ethiopia are shown in Figure 18.

Woody biomass inventories

The country was divided into 36 major agro-ecological zones based on climate (temperature, rainfall and length of growing period), soils and landforms. These zones formed the first stage sampling strata for the woody biomass inventory. The land cover types within each agro-ecological zone form the second stage woody biomass sampling units. There are 52 possible land cover types. Each agro-ecological zone is processed as an independent inventory unit.

Transects approximately 2 kilometres long were randomly located within each land cover type within each Agro-ecological Zone. Rectangular plots 20 meters by 100 meters were positioned 100 meters apart. A sub-plot 20 meters by 20 meters was located within the main plot. Within the main plot, all woody plants with a diameter greater than 10 cm were identified and their diameters and other parameters such as tree height, DBH at stamp height, etc. were measured. Within the subplot, all woody plants were identified and measured.

The number of sample plots per Agro-ecological Zone was determined by the standard deviation of the weighted mean of the stock in the each land cover stratum within the Zone. During Phase II the Project has surveyed 23,058 plots and sub-plots along some 2,305 transects.

Table 23 Extent of Ethiopia's High Forests

Region	Total (ha)	%
Oromiya	2,547,632	63%
SNNPR	775,393	19%
Gambella	535,948	13%
Dire Dawa	0	0%
Harari	216	0%
Amhara	92,744	2%
Tigray	9,332	0%
Beneshangul	68,495	2%
Afar	39,197	1%
Somali	4,257	0%
Total	4,073,213	3.56%

Source: (WBISPP, 2004).

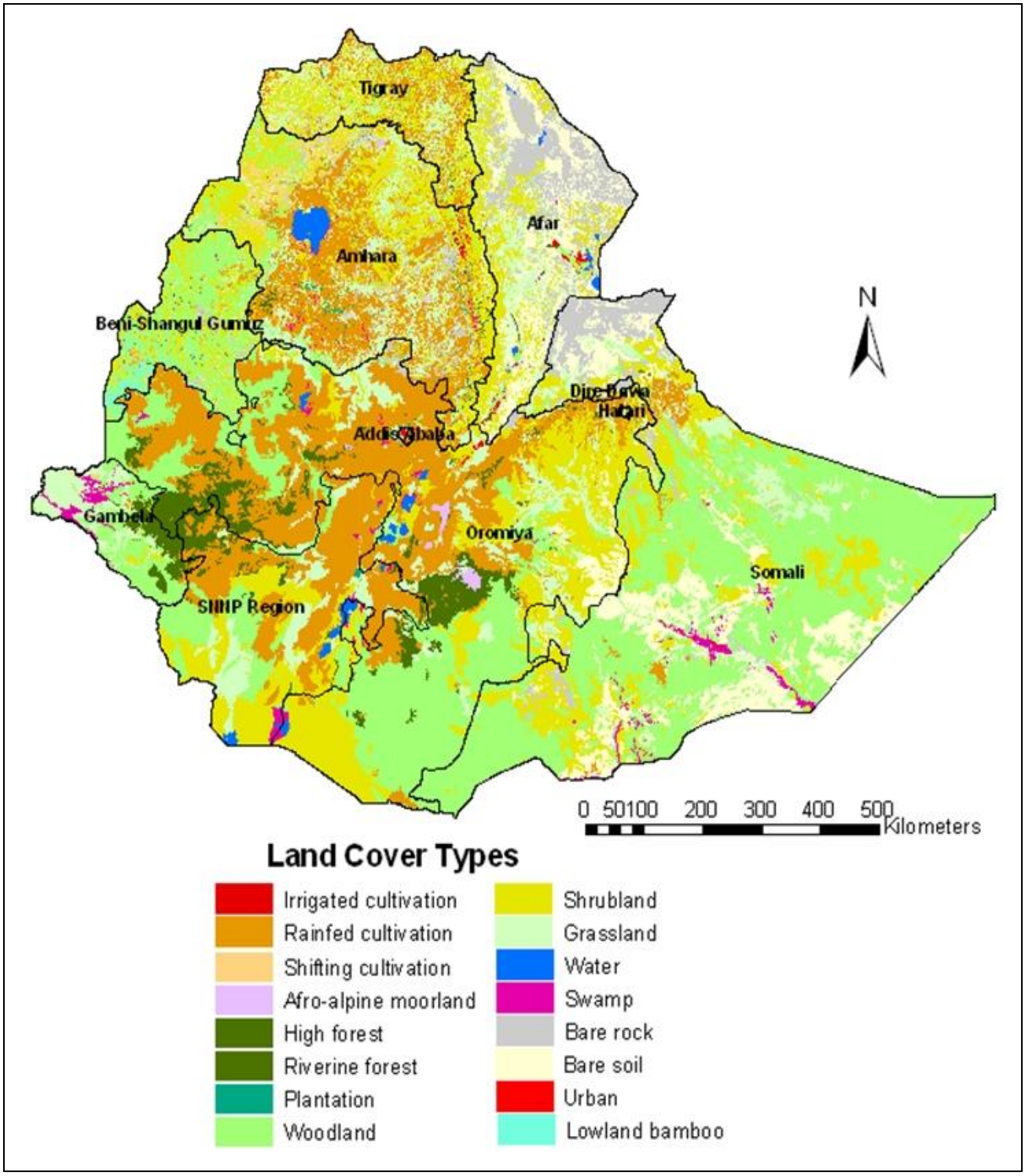


Figure 23: Dominant land cover types in Ethiopia (WBISPP, 2005

Table 21 Overview of available historical data sources

Project name (donor)	Monitoring parameter	Method	Reference area	Reference year(s)	Responsible organization
WBISPP – Phase I (World Bank)	Land use (52 classes) Woody biomass, covering - Agro-ecological zones (36) - Land cover types (52) - Counted species 452	Remote Sensing (Landsat) Forest inventories	South-West Ethiopia (South of 10°N and West of 40°15'E)	1986-1989 Landsat images 1989-1995 forest inventories	MoME
WBISPP – Phase II (World Bank)	Land use (52 classes) Woody biomass, covering - Agro-ecological zones (36) - Land cover types (52) - Counted species 452	Remote Sensing (Landsat) Forest inventories	Rest of Ethiopia (North of 10°N and East of 40°15'E)	1995-2000 Landsat images 1999-2005 forest inventories	MoARD
River basin master plans (To be clarified under RSC)	Land cover within river basins	Remote Sensing	7 river basins in Ethiopia	To be clarified under RSC	MoWR
CDM inventory project (World Bank)	Forested area	Remote Sensing (Landsat & occasionally SPOT)	Ethiopia, except Gambella and Benishanguli Gumuz	2000-2002 Landsat-ETM 2006 few SPOT images	FEPA, EMA
Humbo CDM reforestation (UNFCCC)	Carbon emission/sink	Forest inventories Area estimate (GPS)	SNNPRS (Wolayita zone – Humbo Woreda)	<1990: deforested area 2006: GPS area estimates	World Vision Ethiopia
NTFP-PFM (EU, Netherlands, Norway)	Deforestation Land use	Remote Sensing (Landsat)	SNNPRS (Skeka – Kefa & Bench-Maji zones)	1973, 1985, 1991, 2001, 2009	University of Huddersfield
Bale Mountains National Park (Germany, Netherlands)	Land cover change Above-ground biomass, soil carbon, carbon emissions	Remote Sensing Forest inventories	Bale Mountains National Park	1973, 2000, 2005, 2008	Frankfurt Zoological Society
BERSMP	Deforestation	Remote Sensing (Landsat & SPOT)	Bale Eco-region	1986, 1997, 2002, 2006	Farm-Africa / SOS Sahel Ethiopia
Gambella aerial inventory (Netherlands)	Land cover	Aerial high resolution imagery	Gambella	To be clarified under RSC	HoAREC
PhD theses - Kiros Meles Hadgu - Meley Mekonen	- Land use change - Carbon stock accounting	- Remote Sensing (aerial photograph, Landsat) - Forest inventories	- Tigray - Tigray	- 1964, 1985, 1995, 2000 - 2006-2008	- Wageningen University - NORAGRIC

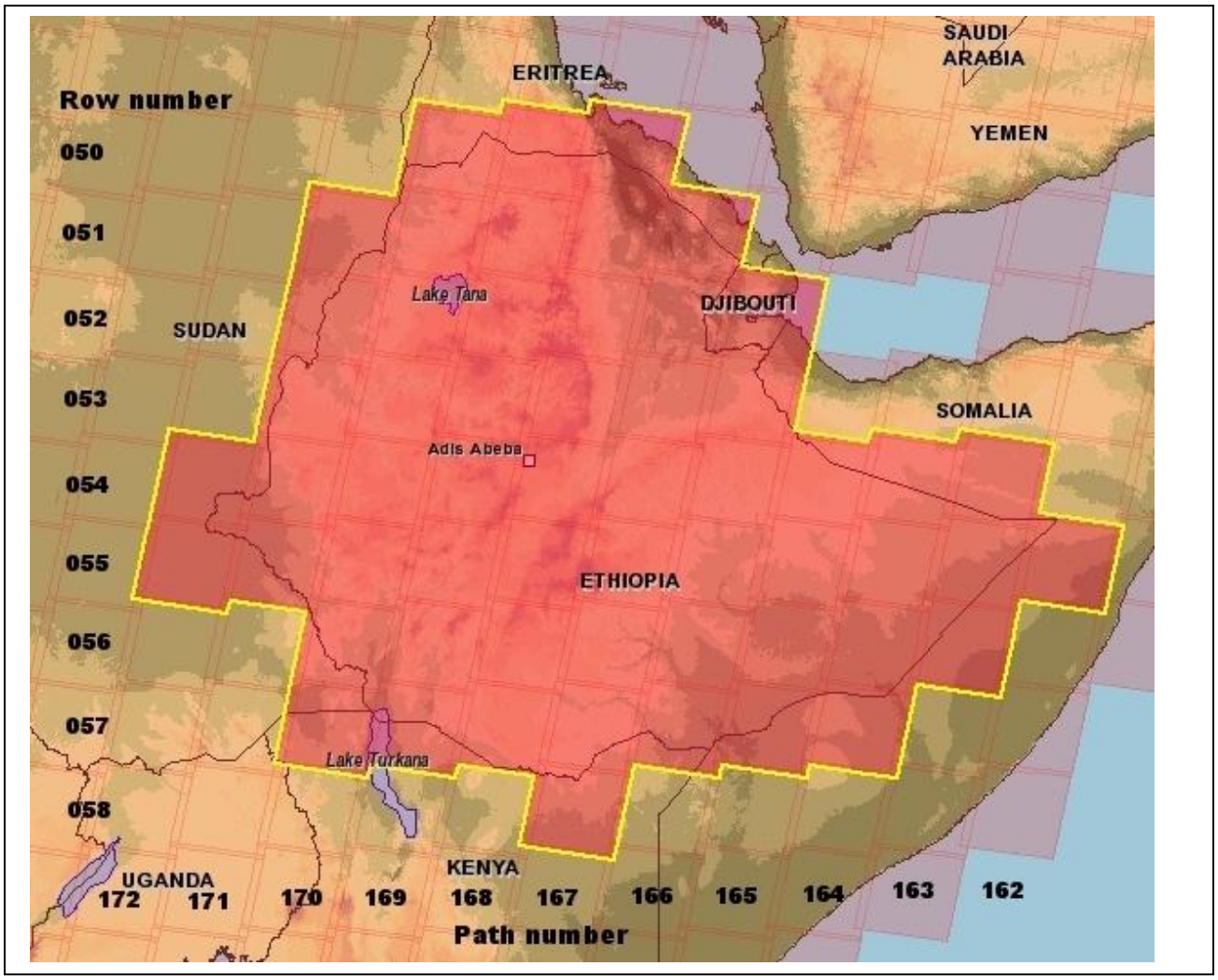


Figure 24 Overview of Landsat images covering Ethiopia

Non Timber Forest Product - Participatory Forest Management (NTFP-PFM) project

This project located in the north-western part of the Southern Nations, Nationalities and Peoples Regional State (SNNPRS) focuses on five woredas: Anderacha and Masha woredas in Sheka Administrative Zone, Gesha woreda in Kefa Administrative Zone and Sheko, South Bench woreda in Bench-Maji Administrative Zone. The five woredas cover some 347,381 ha with some 139,750 ha of Montane Rain Forest and Highland bamboo (covering 40 percent of the area).

The main objective of the Project is: 'To maintain a forested landscape to support improved livelihoods of local, forest-dependent communities and thereby ensure the delivery of environmental services in a wider context'

In this project, initial estimates for carbon baseline on biomass stocks are based on information provided from National Woody Biomass Inventory and Strategic Planning Project (WBISPP 2001, 2000, 2003). The WBISPP (2001) estimated above-ground volume for Dense

(50-80% crown cover) Broadleaf Forest to be 82 tons/ha biomass and 40 tons/ha for Open Forest (20 - 50% crown cover). These values have been used for "Undisturbed" and "Disturbed" forest respectively. In addition, above-ground and below-ground biomass was calculated using the UNFCC accepted method (Pearson et al., 2005).

Humbo/Soddo Community Based Forest Management Project (H/SCBFMP)

This Clean Development Mechanism (CDM) project focuses on reforestation in the Humbo woreda in the Wolayita zone in SNNPRS. The Humbo Assisted Regeneration project involves the restoration of indigenous tree species in a mountainous region of South Western Ethiopia. This project uses an approved CDM afforestation and reforestation methodology, namely tree planting, assisted natural regeneration and control of animal grazing (so-called AR-AM0003 method). The methodology utilizes Version 2 of the Tool for the Demonstration and Assessment of Additionality in Afforestation/Reforestation CDM Project Activities (UNFCCC, 2009). Carbon emissions and/or sinks will be measured by forest inventories and GPS area estimates.

Assessment of the selected carbon pools and emission sources includes above-ground biomass and below-ground biomass. Both carbon pools are considered appropriate given that the objective and technology of the project is natural regeneration of degraded areas with supplementary planting. In the project area, anthropogenic pressure and other physical factors such as terrain, slope and location have significant impact on the baseline scenario. Accordingly, the project baseline was categorized into four strata. Within each stratum, baseline scenario of the mean carbon density was measured and calculated (Table).

Table 22 Mean carbon density of the baseline

	Stratum 1	Stratum 2	Stratum 3	Stratum 4	Total
Area (ha)	233.88	745.16	1633.90	95.14	2728.08
Mean carbon density (tC/ha)	8.850	3.503	8.727	7.090	

Two steps are outlined to identify the most plausible baseline scenario for each stratum. These include:

1. Define the project boundary and
2. Analyze historical land use, local and sectoral land-use policies or regulations and land use.

Accordingly, the Humbo Project has computed the total estimated baseline net GHG removals by sinks (tonnes of CO2 e), total number of crediting years identified, and annual average over the crediting period of estimated baseline net GHG removals by sinks (tonnes of CO2 e) for the years 2007 to 2036.

Bale Mountains National Park (BMNP)

The BMNP project mapped land-use (changes) for the years 1973, 2000, 2005 and 2008. Carbon stock of the 87,703 hectare montane forest of the National Park was estimated and a number of avoided deforestation scenarios were compared to business-as-usual carbon dioxide emissions. Carbon stock was quantified in above-ground tree biomass and soil. Carbon stock in standing forest areas is considerable, with each hectare containing 208tC in above-

ground tree biomass and 315tC in forest soil carbon. The Harenna forest also contains glades, where although tree carbon is absent, soil carbon stock is still considerable at 215 tC per hectare. In light of these results the transfer of carbon in both tree and soil biomass to the atmosphere as a result of deforestation is substantial.

Bale Eco-Region Sustainable Management Project (BERSMP)

The project will protect and rehabilitate the natural forests in the Bale Mountain Eco-region of Ethiopia, one of the 34 Global Biodiversity Hotspots. The project covers an area of 0.5 million ha and surrounds a National Park with an area of 0.2 million ha. Until 2017 the project will sequester 21 million tCO2 by i) reducing the current deforestation rate, ii) rehabilitating the forest and related carbon stocks and by introducing sustainable forest management practices. Community based organizations (CBOs) and the Bale Mountain Forest Enterprise, which is part of the Oromia State Forest Enterprises Supervising Agency, will be the project implementer. A historic carbon baseline was established using high resolution remote sensing technology (SPOT and LANDSAT images from 1986, 1997, 2002 and 2006). The area was stratified into five forest types: highly and slightly degraded dry mountain forest, highly and slightly degraded moist mountain forest and bamboo forest. Depending on the regional distribution of settlements in the area, 3 different forest management types will be established: i) Forest Enterprise managed forests (FEM), ii) CBO managed forests, where CBOs have exclusive forest user rights and iii) Enterprise & CBO joint forest management (JFM), where the latter will be rewarded for protecting the forest based on a performance contract and carbon revenue sharing.

Required data and implied capacity building

New data from aerial photographs and ground verification at successive points in time are thus required for the ecologically and economically different component parts of the whole country so as to include all grasslands and wetlands and not be restricted to dealing only with forests and agricultural lands. Additional accuracy for the forests can be obtained by including the existing data in quantifying the reference emission levels and corresponding reference levels to quantify emissions and removals following methodologies recommended by the most recent IPCC report which, at the moment, are those of 2006.

In order to cover the impacts of agriculture and pastoralism as well as to monitor the carbon sequestering capacity of all types of land use, including forests, capacity for estimating soil carbon stocks and not only for estimating vegetation cover, is a prerequisite.

The ecological, economic and socio-cultural diversity of each of the administrative regions of the country is considerable and the diversity does not show only at the countrywide level. Therefore, each of the administrative regions has also to be divided into distinct parts for the purpose of developing reference emission levels and reference levels. For these reasons, especially in the context of avoiding leakages, it will be necessary to treat an administrative region as if it were a distinct complex country, by identifying major land use changes/conversion in different national regional states and the country as a whole. Ethiopia will assess its historical data to assess REL and RL using RS data from 2000 to 2010. The justification for doing this is that starting from 2000 it is possible to use the most comprehensive satellite data sets at national scale. This choice should allow Ethiopia to have two-three data points of 5 years intervals to assess the historic trend in forest area extension.

The data and the human capacity will enable the calculation of the historical trends in carbon emissions/removals, based on IPCC guidelines. The extrapolation of the historical trend into the future can serve as the standard reference scenario.

Capacity building and pilot projects

The Table below gives the results of an inventory conducted during the R-PP development process on available monitoring and carbon accounting expertise and software resources. This provides a basis to identify gaps in capacity and resources that should be addressed during R-PP implementation.

Table The expertise is classified as follows:

None: any relevant expertise in this field for the indicated organisation

Low level expert: only knows some basic principles, needs training in all aspects of the indicated field of expertise

Medium level expert: needs additional training in certain topics in the indicated expertise field

High level expert: is capable of performing the required action/analysis without any further training and could even serve as a trainer for low and medium level experts

Table 23 Available monitoring and carbon accounting expertise and software resources

	Available REDD carbon accounting expertise	**Available forest inventory expertise**	**Available GIS expertise**	**Available Remote Sensing expertise**	**Available GIS software**	**Available Remote Sensing software**
FEPA	4 Low level expert	4 Low level expert	3 medium level experts 4 low level experts	3 medium level experts 3 low level experts	ArcView GIS 3.2a Arc GIS 9.0	ILWIS 3.0
EMA	None	None	2 medium level experts	2 medium level experts	ArcViewGIS 3.x ArcGIS 9.3	Erdas IMAGINE 8.0 ILWIS 3.0
EWCA	None	None	None	None	None	ILWIS 3.0
CSA	None	None	2 Medium level	2 Medium level	ArcViewGIS 3.x ArcGIS 9.3	ILWIS 3.0
FRC - EARI	2 Medium level	2 Medium level	1 Medium level	1 Medium level	ArcViewGIS 3.x ArcGIS 9.1	ILWIS 3.0
IBC	None	2 medium level 1 low level	1 low level	1 low level	None	ILWIS 3.0
Mekelle University	1 Medium Level	None	2 Medium level	2 Medium level	ArcViewGIS 3.x ArcGIS 9.1	ILWIS 3.0

	Available REDD carbon accounting expertise	Available forest inventory expertise	Available GIS expertise	Available Remote Sensing expertise	Available GIS software	Available Remote Sensing software
	1 High level					
WGCF	2Medium level	3 Medium level	1 Medium level	1 Medium level	ArcViewGIS 3.x ArcGIS 9.1	ILWIS 3.0
HoAREC	None	None	None	None	None	None
Farm-Africa/ SOS Sahel Ethiopia	1 Medium level	1 medium Level	1 High level	1 high level expert	ArcViewGIS 3.x ArcGIS 9.1	ILWIS 3.0
FZS				1 high level expert	ArcViewGIS 3.x ArcGIS 9.1	ILWIS 3.0
NTFP-PFM	2 low level	None	1 Medium level	1 high level expert	None	ILWIS 3.0

Besides the need for improved capacity on above ground land cover estimation, table 26 shows the total lack in Ethiopia of human capacity for soil carbon stock estimation. this capacity will have to be developed sufficiently not only for measuring to generate the data which will be the basis of, but also to review the quantities internally both before, and externally after, the reporting of emissions and removals by REDD+ and by the other economic sectors.

Terms of Reference for developing Reference Scenario

Based upon the lessons from existing experiences in Ethiopia with reference scenario development, combined with international best practice and examples of other African R-PP's (Kenya, DRC), the following Steps are proposed during the R-PP implementation to calculate a reference scenario:

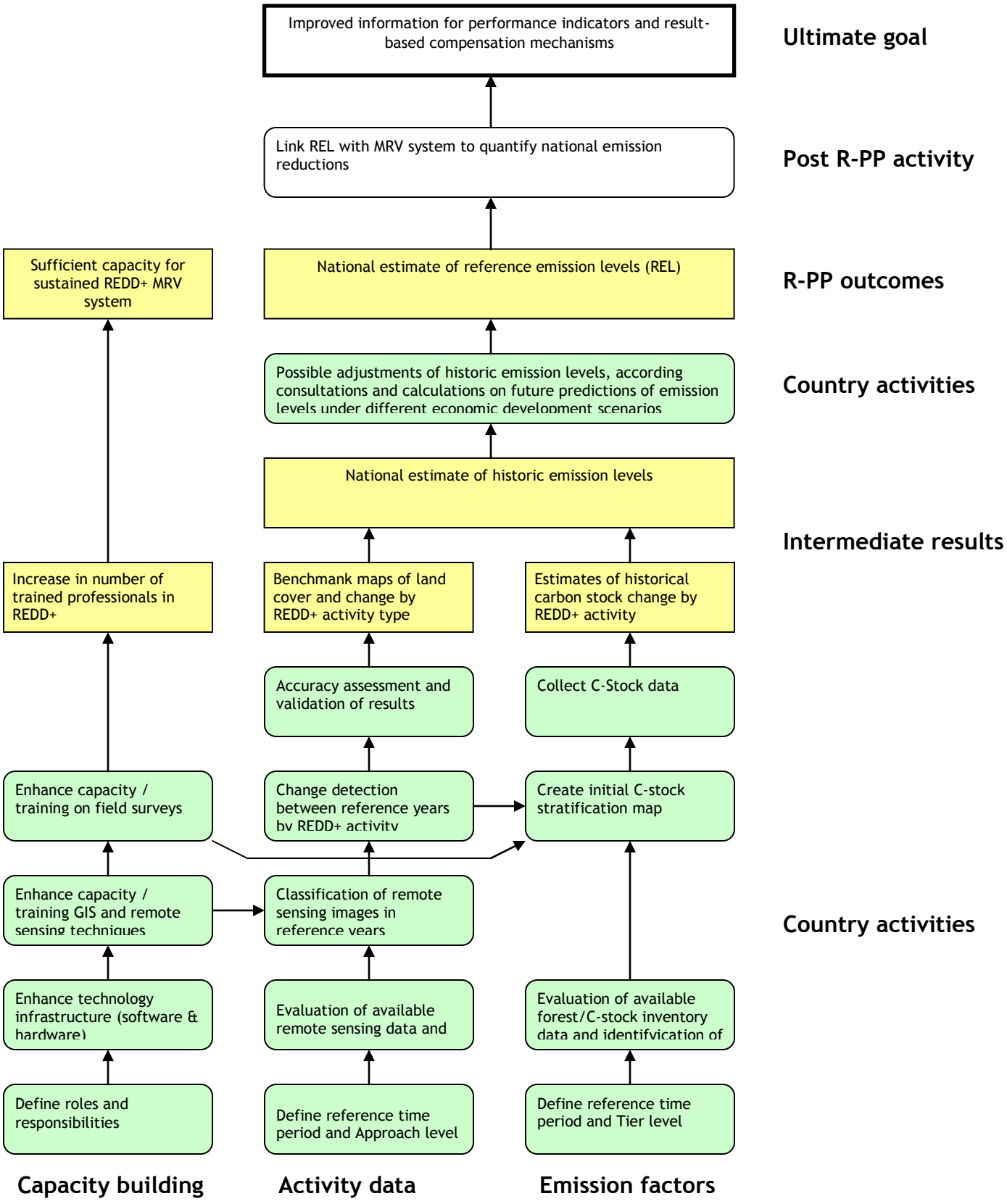


Figure 25 Outline of activities for development of reference emission scenario

Step 3.1 - Preliminary assessment

The effort on Green Growth conducted in 2010 by the EDRI, with the support of the GGGI, established a preliminary assessment of current and future carbon emissions of Ethiopia, until 2030. This work was based on available local data on carbon stocks and emissions (e.g. WBISPP), and used a non linear modeling method, taking into account such factors as sectoral development plans of Ethiopia, demographic growth, present and past agricultural development and deforestation.

The some key outcomes of this work have been presented in 2a and 2b, and they now need to be syndicated and validated with all forestry stakeholders in Ethiopia.

Step 3.2 – Capacity building

The inventory conducted during the R-PP development process on available monitoring and carbon accounting expertise and software resources, revealed that training is needed on the following topics, which are prioritized from most important to less important:

- REDD+ carbon accounting methods and framework; low to medium level expertise is present on detailed information on the IPCC methodologies for calculation of GHG emissions and removals at (sub-) national scale.
- Mapping of activity data; the remote sensing and GIS knowledge and software is available in general at low to medium expertise level;
- Mapping of emission factors; in general a medium knowledge level is available in setting up and executing forest inventories. The main knowledge missing is to judge the quality of existing data and setting up a statistically sound sampling method.

Step 3.3 – Define reference time period and Tier/Approach level

The REL of Ethiopia will be based on historic emissions from 3 points in time over the last 10 years; most suitable seem the years 2000, 2005 and 2010. The year 2000 is selected, because during this and surrounding years the WBISP project was running and a large amount of activity and emission factor data was collected all over Ethiopia. REDD is first mentioned at the UNFCCC conference in 2005, the second reference point in time. The time period 2000 to 2005 forms the reference period without any impact from REDD discussions. The year 2010 is selected to observe the deforestation and forest degradation trends over more recent years in Ethiopia.

In line with the national multi-sectoral consultation findings and considering the existing reality of the country, Approach 3 and at least Tier 2 will be adopted in a regular monitoring period of 5 years interval. Approach 3 activity data (remote sensing maps) and Tier 2 emission factors allows for regional assessment of the reference scenarios, which seems to be appropriate in Ethiopia, considering the large regional differences (forest density, population density, economic development, weather conditions, etc.).

Step 3.4 – Review available data sources

The work led by the EDRI produced a preliminary review of the existing local data on carbon stocks and emission, necessary for the first analyses. This review process will provide a complete and critical view of current data availability.

The review process will compile and evaluate existing data on land cover, carbon stock and forest inventory data against accuracy/precision criteria and quality level. Hereafter the data gaps are identified.

The review process will evaluate the methods employed such as:

- Land cover mapping procedure (pre-processing, classification method, units, etc.)

- Forest inventory method (sampling method and scheme, volumetric equations, etc.)
- Carbon accounting (IPPC methodology, tier levels, etc.)

The purpose of the exercise is to know whether the available data sources can be compared and used simultaneously. Possible usage of historic data could include:

- Usage of existing methodologies (classification methodology, sampling schemes)
- Usage of raw data (satellite images, sampling counts and parameters)
- Usage of results (deforestation rates, land cover maps, carbon pools)

Carbon accounting methods and data in the following 5 projects will be reviewed:

- WBISPP project
- Humbo CDM reforestation project
- NTFP-PFM project
- BMNP project
- BERSMP project

After identification of suitable data sources for further analysis, the actual data and projects' results have to be retrieved from the implementing organizations and the following two actions taken in a review process:

- Identification of data gaps
- Quality control and cross-checking of the data and project results should be performed

Step 3.5 – Quantify activity data

Based upon the driver analysis and the activities to be monitored, both deforestation (agricultural expansion, forest fires) and forest degradation (wood fuel extraction) should be mapped for the reference scenario.

To map deforestation, the Landsat program is the most useful of the many satellite systems designed for land cover monitoring, because it is the longest running exercise in the collection of multispectral, digital data of the earth's surface from space. The long life of the program, along with its high spatial resolution (30 m) and extensive archive of freely available data, makes Landsat data the ideal choice for mapping deforestation at the (sub) national scale for Ethiopia. The country covers approximately 54 Landsat scenes.

Forest degradation is also an important carbon emission in Ethiopia. Remote sensing can also be useful for mapping and monitoring indicators of forest degradation such as logging roads, fire scars, other forest canopy damages, and secondary forest recovery. As mainly the presence of crown cover is mapped, the actual forest degradation in terms of carbon stocks is hard to monitor with remote sensing alone. However, it can guide a filed survey to understand the impacts of forest degradation and carbon stock changes.

The following sub-steps are distinguished:

Step 3.5a. Create land cover maps of 2000, 2005 and 2010 and perform change detection for historical reference period. Automated digital classification with human interpretation and correction is the most accurate and efficient approach to land cover change mapping. If possible, the land cover classes, as identified by the Woody Biomass project, will be used also to quantify the more recent activity data. By doing so, the already existing and to-be-developed results can be evaluated against each other. An even or important advantage is

that the forest inventories, acquired during the Woody Biomass project, can also be used as reference emission levels.

Step 3.5b. Accuracy assessment. The accuracy assessment can be conducted by comparing maps of deforestation derived from remote sensing with field observations or high resolution aerial imagery.

Step 3.5c. Mosaic and stratification of classification products. Individual Landsat products will be stitched together to create the final wall-to-wall map. The resulting land cover (change) maps will be used to stratify the field surveys.

Step 3.6 – Quantify emission factors

Based upon the outcomes of the evaluation of the historical and ongoing forest inventories, additional forest inventories will be carried out to fill any gaps. Similar to Step 3, a standard procedure has to be developed on how to implement the field work. This should also be developed together with the work package on Monitoring (Component 4).

Ethiopia will use at least a Tier 2 level of data for its estimate of historic emissions/removals. The sub-steps below describe how to collect Tier 2 level data for emission and removal factors to be combined with the activity data collected in Step 3.

Step 3.6a. Identify key carbon pools to include in the historic estimate. The IPCC recognizes five forest carbon pools: aboveground biomass, belowground biomass, soil, litter and dead wood. Ethiopia proposes to include aboveground and belowground carbon stock in trees as the main pools in all land cover changes related to REDD+ activities.

Step 3.6b. Develop protocols for carbon stock change data collection including accuracy/precision targets and QA/QC protocols. Techniques and methods for measuring and estimating the carbon stocks of terrestrial carbon pools that are based on commonly accepted principles of forest inventory, soil sampling, and ecological surveys are well established. Several sources (e.g., IPCC GPG LULUCF, World Bank's BioCarbon Sourcebook for LULUCF, GOFC-GOLD Sourcebook, etc.) are available that provide standard methods for measuring and estimating the carbon stocks for the key carbon pools that will be identified in from the previous step. These sources will be reviewed and a set of standard protocols for field measurements and for emission factor estimation suitable for Ethiopia's situation developed. Standard protocols will be developed for each selected pool. Most likely is that the existing sampling method of WBISPP or one of the ongoing monitoring activities being developed/undertaken by the various projects discussed previously will be used and adapted/expanded where necessary.

The forest inventory protocols, developed under the Woody Biomass project (and the more recent other relevant projects), will be taken into account here as well, in order to make use of the detailed nation-wide inventories already executed in the past. To make use of these existing data, the method, stratification, etc. should be interrelated.

Step 3.6c. Link field and remote sensing data. The outcome of Step 3 will be used to stratify the forested areas in Ethiopia according to forest type and/or ecological zone. The areas under highest threat of deforestation will be sampled in more detail. In Ethiopia it is expected that all remaining high forest (approximately 3|% of the country) is under threat and the dry wood lands are less threatened. Especially for these wood lands remote sensing maps should provide areas undergoing rapid change and similar areas elsewhere in Ethiopia.

Step 3.6d. Carbon stock measurement. The detailed plan from the prior steps will be implemented and the forest areas to be measured identified on a map. A sampling strategy will be elaborated to ensure that carbon stocks measured in each stratum attain an acceptable level of accuracy and precision. Results from the field measurements will be used

to estimate emission factors for various land cover changes (deforestation, degradation, forestation, enhancement of carbon stocks) using the IPCC GPG framework, along with the estimated uncertainty around each emission factor.

Step 3.7 – Quantify historical carbon emission level This step will result in estimates of the annual historical emissions and removals, based on changes in carbon stocks, for the three time periods in the reference time frame. The IPCC framework will be used for this step, applying the stock change approach for deforestation and forestation - basically combining the area of change and the carbon stocks before and after the change event. For degradation and enhancement of C stocks, the gain-loss approach is likely to be the preferred approach. Carbon stock gains would be accounted for with rates of growth, and carbon stock losses would be accounted for with data on timber harvests, removals of trees for charcoal/fuel, and transfers to the dead organic matter pool due to disturbance.

For fire, the IPCC AFOLU 2006 report (Ch. 2) provides detailed methods (equations and combustion factors for both CO2 and non-CO2 GHGs) that would be used. This would combine the area burned with the carbon stock before and after a burn along with IPCC default values for combustion and efficiency factors.

Step 3.8 – Development of reference scenario

The last step is the development of the reference scenario. Two options are available:

- Standard extrapolation of the historical emission rate into the future is relative easy to achieve.
- Non-linear modeling of reference scenario, taking into consideration such factors as GDP, population growth, resettlement programs, past and present agricultural expansion, sectoral development plans, specific agricultural investment programs, and/or adjustment coefficients otherwise derived from such factors and data. This option will require advice from national and intentional experts.

The work conducted by the EDRI in 2010 already used the second, more accurate, non linear modeling method to develop preliminary assessments of current and future carbon emissions. It produced assessments of different scenario (business as usual, “Green growth” and optimistic) depending on the mitigation levers implemented.

The development of sub-national reference scenarios should be taken as well, as the country is huge, deforestation drivers can differ regionally and the regional situation differs substantially per region.

Table 24 Summary table of actions to build a reference scenario

Gap / Challenge Analysis		Proposed assessments related to land use, policy and governance to be undertaken during the R-PP implementation phase				
	Action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing (in years)**
Lack of monitoring capacities and experiences in applying international standards	**1. Develop capacity for REDD+ monitoring framework (IPCC guidelines, LULUCF, carbon stock accounting, etc.)**	Contracted international consultant National REDD+ stakeholder institutions	• Training, lectures	Qualified experts that can undertake carbon trading	• No. of experts trained on reference scenario (RS) development and MRV tools and methods • No. and type of international carbon accounting tools/methods included in the trainings • No. of trainings given and quality of training provided	2011-2013
Remote sensing units missing	**2 .Develop capacity in remote sensing techniques (pre-processing, segmentation, land cover classification, etc.)**	National and International Remote Sensing training institutions National, Regional and Woreda/Kebele REDD+ stakeholder institutions	• Training, pilot projects • Field level training • Study tours	Qualified experts that can undertake remote sensing image interpretation and analysis	• A dedicated units of remote sensing for REDD+ • No. and type of Remote sensing techniques developed • No. of people trained in remote sensing techniques	2011-2013

Gap / Challenge Analysis		Proposed assessments related to land use, policy and governance to be undertaken during the R-PP implementation phase				
	Action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing (in years)**
Remote sensing and GIS facilities missing	**3. Remote sensing and GIS facilities (software, plotter, navigation equipment, satellite images, etc.)**	National, regional and woreda/kebele REDD+ stakeholder institutions	• Purchase hardware and software	Software, plotter, navigation equipment, satellite images, etc.	• No. and type of remote sensing hardware & software acquired	2011-2012
Capacity for measuring soil carbon sequestration and release lacking	**4. train experts abroad or bring trainers**	National, regional and woreda and possibly even kebele REDD+ stakeholder institutions	Theoretical and practical training abroad and in pilot areas in Ethiopia	Competent personnel become available	• No. of people trained measuring soil carbon sequestration and release • Type and level of competence	2011-2013
Consensus on reference time period and Tier/Approach level	**5. Define reference time period and Tier/Approach level**	FEPA, MoA, EMA, FRC, IBC, universities, etc.	Consultation	Agreement on REDD+ approach	• Consensus report on reference time period and Tier/Approach level	2011
No national REDD+ executive consensus on availability and suitability	**6 Review available data sources**	Similar as above	• Literature review, interviews, consultations, etc.	Detailed overview of available data Database with existing	• No. and type of review/interviews/consultations done • Dedicated database of information	2011

Gap / Challenge Analysis		Proposed assessments related to land use, policy and governance to be undertaken during the R-PP implementation phase				
	Action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing (in years)**
of data				data (satellite images, forest inventories, etc.)		
Harmonized historical land cover data needed to assess deforestation and forest degradation	**7 - Quantify activity data**	Similar as above	• Remote sensing analysis	Historical land cover map	• Historical land cover map of 2000, 2005, 2010 produced	2011
Data gaps need to be addressed	**8- Quantify emission factors**	Similar as above	• Field inventories	Measured forest carbon stocks	• Look-up tables of of forest carbon stocks	2011-2013
Historical emission levels are (sometimes partial) missing	**9. Quantify historical emission level**	Similar as above	• Analysis, reporting	Historical carbon emission level (baseline)	• Historical carbon emission level (baseline)	2012-2013

Gap / Challenge Analysis		Proposed assessments related to land use, policy and governance to be undertaken during the R-PP implementation phase				
	Action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing (in years)**
No national reference scenarios exist	**10 – Development of reference scenario**	Similar as above	• Consultation, Modeling, reporting	Reference scenario	• Established reference scenario (RS)	2012-2013

Table 25 Budget reference scenario activities

Summary of Monitoring Activities and Budget						
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands)**				
		2011	**2012**	**2013**	**2014**	**Total**
Capacity Building & Awareness raising on reference/ baseline scenario and MRV System	1. Develop capacity for REDD+ monitoring framework (IPCC guidelines, LULUCF, carbon stock accounting, etc.)	100	50	50	-	200
	2. Develop capacity on Remote sensing techniques (pre-processing, segmentation, land cover classification, etc.)	200	100	100	-	400
	3. Remote sensing and GIS facilities (software, plotter, navigation equipment, satellite images, etc.)	200	100	-	-	300
	4. Develop capacity in estimating soil carbon release and sequestration	200	100	100	-	400
Reference Scenario development	5. Define reference time period and tier/Approach level l	80	20	-	-	100
	6. Review available data sources	60	10	-	-	70
	7. Quantify activity data	300	100	-	-	400
	8. Quantify emission factors	300	100	50	50	500
	9. Quantify historical emission level	-	100	50	-	150
	10. Development of reference scenario	-	100	50	-	150
Total		1440	780	400	50	2670
Government		0	0	0	0	0
FCPF		400	200	100	30	730
UN-REDD Programme		400	200	100	-	700
Nordic Climate Facility-NCF		500	300	200	20	1020
French Development Agency-AFD		140	80	-	-	220

Component 4: Design a Monitoring System for (4a) Emissions and Removals and (4b) Other Benefits and Impacts

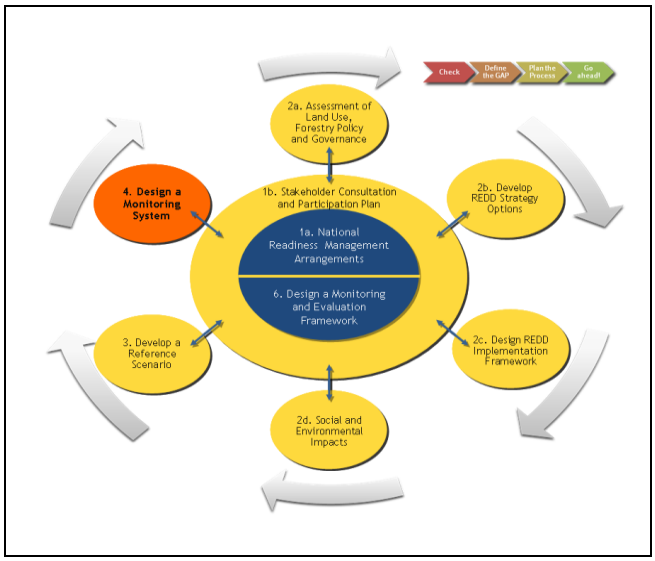


Figure 26 Component 4 in the REDD readiness wheel

In order to participate in the REDD+ under the United Nations Framework Convention on Climate Change (UNFCCC), Ethiopia must establish a system of measurement, reporting and verification (MRV) for Greenhouse Gas (GHGs) emissions, including GHGs from deforestation and forest degradation.

Leading on from the reference scenario outlined in Component 3, this section lays out how to design an appropriate monitoring system for the verification of measured emissions and removals of greenhouse gases (MRV). This will generate the proof that REDD+ support is being effective in capturing carbon through avoided deforestation and degradation and through increased soil carbon stocks. The MRV will also highlights other benefits and impacts of REDD+ support which go beyond carbon stock, such as sustainable forest management and increased biodiversity.

As with the reference scenario, the MRV system will be developed based on international best practice while harnessing existing in-country experience with REDD+ and CDM pilots, GIS and inventories, etc. This will be combined with the development of innovative participatory approaches aimed at engaging forest-dependent communities in monitoring and verification work to build understanding and local ownership.

Even though Ethiopia is a least developed country, it will be happy with an international verification for those components for which it has received financial, technological and capacity-building support. Even for those components for which it has not received support, Ethiopia will welcome the verification of results, through, of course, the outcome of such verification will be used only for learning lessons from. These lessons will help it achieve its plan of achieving a 0% net emission by 2025.

The content of this component, as with the earlier components, has been developed through a combination of literature review and a process of engagement with a wide range of stakeholders' consultation (See 1b for more details on stakeholder consultations).

The stakeholder discussions have decided that participatory monitoring and verification is the best approach for Ethiopia because it is participatory movements that have so far managed to reverse deforestation and overgrazing while top-down decisions have always failed. A necessary consequence of the present decision is the need for the opening of all REDD+ activities, including domestic monitoring and verification, to the advisory role of international verification. Such an advisory verification will ensure transparency and objectivity, thus strengthening the participatory process.

Emissions and Removals (Component 4a) and Other Benefits and Impacts (Component 4b)

A single, logical framework for REDD+ monitoring is put together, which includes the Components "4a Emissions and Removals" and "4b Other Benefits and Impacts" and it is presented below.

MRV system

Objectives and design

The monitoring system will serve to monitor the reduction of emissions resulting from deforestation and forest degradation; and the role of conservation and sustainable management of forests as well as the enhancement of forest carbon stocks.

Ethiopia's MRV system will enable the evaluation of anthropogenic emissions by sources and anthropogenic removals by GHG sinks resulting from activities relating to forestry. It will be developed in accordance with the 2006 Guidelines of the Intergovernmental Panel on Climate Change (IPCC) for national inventories of GHGs.

On measurement: Ethiopia needs to have guidelines, rules and/or best practices to be followed when estimating the impacts of measures that reduce emissions from deforestation and forest degradation. These guidelines will be designed in conformity with the available relevant international instruments or practices.

On reporting: Ethiopia needs to have a standardized national reporting format, and/or common reporting guidelines outlining how actions are reported, e.g. which language, what units, what timing, where reports are collated/collected, what should be reported, and/or when reporting should take place.

On verification: Ethiopia needs to decide on who the verification body or bodies is/are; what the verification process should be, how results should be reported, and how to make any needed adjustments in reports of reducing emission from deforestation and forest degradation.

A Monitoring Reporting and Verification (MRV) system of variation in forest-carbon stock includes a technical and an institutional component.

Technical set-up

Identical to Component 3 (Reference Scenario) two variables need to be known in order to monitor total forest carbon: (i) forest area change or activity data and (ii) carbon stock change estimation or emission factors (carbon lost or gained per hectare). For more details see section 3.2.

Table 26 Proposed choices of MRV system

Greenhouse Gas	Only CO2
Approach level activity data	Approach 3 (wall-to-wall remote sensing)
Tier level emission factor	Tier 3 (stratified continuous forest inventories)
Temporal revisit time	Activity data (remote sensing): - Wall-to-wall coverage: each 5 years - Pilot area monitoring: annual Carbon emissions (forest inventories): 5 years (20% each year)

Key drivers

The same direct drivers and activity processes as mentioned in Component 3 (Table 21) will be explicitly monitored by the MRV system:

- Expansion of traditional agriculture
- Expansion of large scale development activities
- Settlement programs
- wood extraction & other forest products collection
- Forest fires

The following non-carbon variables will be monitored as well:

- Forest governance
- Biodiversity
- Benefit sharing
- Water services (purification and flood protection)
- Eco-tourism

Both carbon and non-carbon variables are combined in a single monitoring framework (Table 34 and 35) and explained afterwards in detail.

Stratification and sampling interval

In principle the whole country should be monitored once in five years. However, it is recognized that certain areas are expected to have higher changes in carbon stocks than others. Therefore, it is proposed to monitor these pilot areas more frequently, if possible each year, but at least bi-annual. The stratification process for selecting the pilot areas will be based upon the following guiding principles:

- Deforestation and degradation rates in the past (as mapped by the reference scenario)
- Future plans of the Ethiopian Government on resettlement programs and agricultural investment programs (like for example is currently taking place in Gambella)
- Areas with high ecosystem values, like natural high forest or national parks

Activity data

A large variety of sensors onboard various satellite systems provide remote sensing images for various purposes. The following parameters are important for the selection of suitable satellite imagery:

Type of sensor

Two types of remote sensing techniques can be distinguished for mapping forested areas.

Table 30 Types of remote sensing techniques

Remote Sensing technique	Pro	Con
Optical	Resembles the human eye Long time series (Landsat from 1972 onwards) Sometimes freely available	Cloud affected

	(Landsat)	
Radar	Clouds have no impact	Available only since 2002 (at medium resolution) Relatively complex technique

Both techniques are suitable for REDD monitoring purposes. Preference is given to optical remote sensing images as they are easier to interpret and analyse. However, due to unfavourable weather conditions (cloud cover) one might be forced to use radar images especially for some parts of the country, notably the South West where cloud cover is common. However, even in the South West, there are sunny times of the year and thus this may not be an insolvable problem.

Spatial resolution

The resolution of a satellite sensor is an important property for the applicability of remote sensing images. The spatial resolution is dependent on the size of the cells of the image. The smaller is the area photographed in the cell, the higher the resolution becomes.

Table 31 Applicability of remote sensing images

Sensor & resolution	Minimum mapping unit (change)	Observed phenomena
Coarse (250-1000 m)	10~100 ha	Coarse land objects (large lakes, natural vs agricultural areas, etc.)
Medium (10-60 m)	0.5~5 ha	Field level (farm parcels, forest boundaries, roads, etc.)
Fine (<5 m)	<0.1 ha	Structure of surface elements, such as trees or houses

For wall-to-wall monitoring, only medium resolution imagery is suitable as the coarse resolution does not give enough detail while the fine resolution images require enormous amounts of processing and storage capacity and have a high price. The following Table gives an overview of suitable medium-resolution satellite imagery:

Table 32 Overview of suitable medium-resolution satellite imagery for REDD monitoring

Satellite	Resolution	Sensor type	Revisit time	Cost
Landsat	30 m	Optical	16 days	free downloadable
SPOT	10-20 m	Optical	8 days (daily off-nadir)	0.6 US$/km2
CBERS	20 m	Optical	26 days	free for developing countries
IRS-LISS	20 m	Optical	24 days	0.1 US$/km2
AwiFs	60 m	Optical	24 days	0.01 US$/km2
ASTER	15 m	Optical		0.02 US$/km2
RapidEye	5 m	Optical	5.5 days (daily off-nadir)	1 US$/km2
DMC	32 m	Optical	up to daily	0.15 US$/km2

ERS-AMI	30 m	Radar	35 days	0.05 US$/km2
Palsar	5-30 m	Radar		

Processing steps

A standard classification procedure has to be developed for REDD+ monitoring. The following processing steps will form a generic standardized procedure:

- Pre-processing (geo-referencing, radiometric correction, possible rescaling to uniform resolution)
- Segmentation
- Classification (supervised vs. unsupervised)
- Additional classification rules based upon extra information, like GIS layers e.g. parcels, roads, administrative units, etc. DEM, soil maps, etc. would enlarge the quality of land cover classification substantially.

Emission factors

Two options for the determination of emission factors are discussed here. They are both based on forest inventories of above-ground carbon stocks. Below ground carbon stock is taken as percentage of above-ground carbon stock, according to major forest types. The following pools of carbon stock will be taken into account when developing a sampling scheme and method:

- Above-ground biomass
- Dead wood
- Soil carbon
- Harvested wood products
- Non-tree vegetation

Sampling method

Based on the information gathered in this way so far, the most logical and cost effective option will be to build upon the WBISPP results and methods regarding forest inventories.

In the WBISPP project, the country was divided into 36 major agro-ecological zones based on climate (temperature, rainfall and length of growing period), soils and landforms. These zones formed the first-stage sampling strata for the woody biomass inventory. The land cover types within each agro-ecological zone form the second stage woody biomass sampling units. There are 52 possible land cover types. Each agro-ecological zone is processed as an independent inventory.

Transects approximately 2 kilometres long were randomly selected from each land cover type in each Agro-ecological Zone. Rectangular plots 20 meters by 100 meters were positioned 100 meters apart. A sub-plot 20 meters by 20 meters was located within the main plot. Within the main plot, all woody plants with diameters greater than 10 cm were identified and diameters measured. Within the subplot, all woody plants were also identified and measured.

The number of sample plots per Agro-ecological Zone was determined by the standard deviation of the weighted mean of the stock in each land cover stratum within the Zone. During Phase II the Project has surveyed 23,058 plots and sub-plots along some 2,305 transects.

The position of the first plot along the transect was obtained with the Global Position System (GPS) which prior to 2000 was accurate to within +/-100 meters and after 2000 to about +/-20

meters . For each transect the bearing and the number of plots is known. This will be done with caution, and we will deal with stratum and the mean of the stratum but note directly identify the exact point of the transect. An example of the transect database for the Afar Region is shown in Figure 27

It should be pointed out, however, that much forest enhancement has taken place since the WBISPP project, especially in Northern Ethiopia, and this new forest area has to be studied during the implementation of the R-PP to verify the extent to which the WBISPP methodologies apply to it as well.

REGION	TOPO_250_INDEX	TRANSECT_ID	UTM_ZONE	EASTING	NORTHING	BEARING	NO OF PLOTS
AFAR	NC37_4	AFB_8B	37P	716500	1294500	273	2
AFAR	NC37_4	AFN_100R	37P	688148	1261812	240	10
AFAR	NC37_4	AFN_101R	37P	678125	1254620	270	10
AFAR	NC37_4	AFN_102R	37P	678900	1255197	180	10
AFAR	NC37_4	AFN_103R	37P	687499	1261397	214	8
AFAR	NC37_4	AFN_104A	37P	690901	1217698	295	10
AFAR	NC37_4	AFN_104R	37P	608627	1285963	250	10
AFAR	NC37_4	AFN_108A	37P	686102	1253106	213	10
AFAR	NC37_4	AFN_109R	37P	750325	1328896	130	10
AFAR	NC37_4	AFN_10C	37P	720300	1297504	84	9
AFAR	NC37_4	AFN_110C	37P	687905	1256709	107	10

Figure 27 an extract from the transect database for the Afar region (WBISPP, 2004)

By knowing the transect identification number, it is possible to access the woody biomass database and obtain detailed information on the location, the woody biomass characteristics for each plot, the stem size frequency distribution, density of stems, species frequency distributions, total stock and estimated annual yield of woody biomass. Thus, knowing the location of the first plot and the bearing and number of plots along the original transect, it will be possible to recreate the original transect, undertake the same measurements and thus make a physical and statistical comparison of the woody biomass parameters.

We propose to continue using the same sampling scheme (method of stem accounting, locations of the transect/plots, etc.) for the REDD monitoring, review the shortcomings, update the sampling methods and if possible reduce the number of sampling transects/plots, or if necessary add additional sampling transects/plots.

In case that the WBISPP sampling schemes become inapplicable or cannot provide project-level detailed information , a new sampling scheme and procedure has to be set up. In this case, a below-ground carbon stock might also be taken into account. The new sampling scheme is not further detailed, as the option of WBISPP plot sampling looks more promising. . It should be noted, however, that much forest enhancement has occurred since the WBISPP was finalized. In any case, sampling for REDD+ monitoring will be used for prioritizing forest area for REDD+ support and thus the WBISPP plots will have a new variable added in choosing what to sample.

REDD+ indicators

In the framework table below, a set of preliminary monitoring indicators to identify emissions and removals in the Ethiopian context are specified. These will be tested as part of the piloting and adapted where needed. Besides the carbon emissions and removals from deforestation and forest degradation (REDD), other benefits and impacts are also listed. REDD+ stands for improved forest management and REDD++ for biodiversity conservation and social-economical benefits for local forest dependant forest communities (UNFCCC).

Table 33 Overview of REDD monitoring indicators for different categories of REDD

REDD		Monitoring tool			MRV indicator
Level	**Topic**	**Remote Sensing**	**Forest monitoring**	**Other methods**	
RED	Deforestation	Mapping of forest area and changes over time	Forest inventories to estimate carbon stock		Net carbon stock change
REDD	Forest degradation	Mapping of roads and logged areas in forest area	Forest inventories to estimate carbon stock		Net carbon stock change
REDD+	Forest enhancement	Mapping of increased forest area	Forest inventories to estimate carbon stock	Forest concessions Plantation concessions	Net positive carbon stock change
REDD+	Sustainable forest management	Mapping of forest area	Forest inventories to estimate carbon stock	Wood certification Kebeles with PFM	No change in forest area and carbon stocks
REDD+	Forest conservation	Mapping of forest area	Forest inventories to estimate carbon stock	National park acreage	No change in forest area and carbon stocks
REDD++	Biodiversity conservation	Mapping of ecological corridors	Include tree and other species/ including animals in forest inventories		Number of plant/animal species Extent of ecological network
REDD++	Benefit sharing (to local forest dependent communities)	Mapping of forest area and changes over time	Forest inventories to estimate carbon stock (involve local communities in forest inventories)	Legal entities Administrative units Carbon related financial data	Investment/reward per carbon emission unit per legal entity (US$/kgC/ha)
Country specific issues	- Land cover map - Coffee forest - High land & lowland bamboo forests - Gums, incense and myrrh in drlylands	Mapping of land cover Mapping of coffee forest Mapping of high land & lowland bamboo forests Mapping of Accacia commiphora and Boswellia forests	Ground truthing inventory Coffee forest inventories -High land & lowland bamboo forest inventories Ground truthing of Accacia commiphora and Boswellia forests	PRA method	Land cover map Potential coffee export Potential bamboo export CER from bamboo forest. Gum Arabic, incense and myrrh export

Deforestation

As explained before, the deforestation indicator is net carbon stock change which is calculated as the difference over two points in time of the total forested area multiplied by the forest-specific carbon stock value.

Forest degradation

Forest degradation is more difficult to detect as selective logging and wood removal is difficult to detect by remote sensing techniques because the forest crown cover will not necessarily change dramatically. However, the access roads for transporting the wood products from the forest can be detected by medium (10-60 m) resolution imagery. Possibly, other features such as cleared patches of forest can be detected by remote sensing. The areas where these features are found can then be characterized as degraded forest areas. Specific forest inventories in these areas should provide for reliable carbon stock values. Finally, the net carbon stock change can be calculated with a method similar to that of deforestation.

Forest enhancement

Forest enhancement is the opposite of deforestation. Therefore, the same techniques can be applied. Additionally one might look at the concessions start forest plantations, or at the area closures to allow national reforestation, whether that is augmented by enrichment planting or not.

Sustainable forest management

Sustainable forest management implies the sustainable utilization of forest resources for the benefit of communities and states and therefore the carbon stocks are more or less constant over time. The indicator to monitor this process is constant carbon stock values over time.

In addition, two other indicators for sustainable forest management could be explored as well:

- Participatory forest management (PFM) is one of the possible methods to promote sustainable forest management and therefore one possible indicator of sustainable forest management is the number of kebelles (village municipalities) with PFM initiatives. Consequently, the net carbon stock change of kebelles with and without PFM can be quantified.
- A totally different indicator of sustainable forest management might be the volume of certified timber products extracted from the woods or exported from Ethiopia.

Forest conservation

Forest conservation is defined as the measures concerned with the protection and preservation of forest lands and resources such as the establishment of national parks or the prohibition by law of forest exploitation. If implemented properly, one might expect that the carbon stock is constant over time or might even increase.

Biodiversity conservation

Carbon stocks are not directly linked to biodiversity. A large carbon pool (dense forest) does not necessarily mean a rich variety of plants and animals. A Eucalyptus plantation, for example, has a low biodiversity value. However, the opposite might be true; no wood where the climate otherwise allows means relatively low biodiversity values, though a climax herbaceous area may have significant biodiversity.

Consequently, additional indicators have to be defined for biodiversity. Two possibly suitable indicators might be:

- Number of plant/animal species. As forest inventories are already foreseen in the MRV system, a relatively easy solution might be to expand the inventory by counting some of plant and animal species.

- Extent of the ecological network. Biodiversity has a strong positive correlation with the acreage of the natural habitats and the extent of connectivity between them through ecological corridors. Both can be measured by remote sensing techniques.

Co-benefits: Although REDD is necessarily focused on addressing carbon emissions, the Bali Action Plan recognizes that actions to support REDD "can promote co-benefits and may contribute to achieving the aims and objectives of other relevant international conventions and agreements". A notable example is that of the Convention on Biological Diversity. Addressing emissions from deforestation and forest degradation will have significant positive impacts on biodiversity since a decline in deforestation and degradation implies a decline in habitat destruction and thus in biodiversity loss. At the national and local scale, reducing emissions from deforestation and forest degradation in areas of both high carbon stocks and high biodiversity can contribute to climate benefits and further enhance co-benefits related to biodiversity conservation and sustainable use.

The REDD+ mechanism in Ethiopia will encompass conservation, sustainable forest management, and the enhancement of carbon stocks. This approach will have additional positive impacts on biodiversity, in particular since this will be achieved through the appropriate restoration of degraded forest ecosystems and forest landscapes. Afforestation and reforestation (A/R) activities that will be included in the REDD+ mechanism will provide incentives to regenerate forests in previously deforested areas.

Moreover, the exploitations of mixed native forest species will be discouraged in order to yield multiple benefits for biodiversity. Safeguards will also be strictly applied to avoid potential adverse impacts on biodiversity likely to emanate from mono-plantations and the potential use of invasive alien species in plantations. The implementation phase will examine specific ways to promote co-benefits of REDD in order to maximise REDD+ implementation.

For instance, promoting or maximising biodiversity co-benefits may require targeting multiple ecosystem services by undertaking explicit cost-benefit analysis. The cost benefit analysis could involve identification of areas with high ecosystem services benefits, identification of areas of high risk of deforestation and degradation, evaluation of opportunity costs. Once these have been addressed, there will be a clear input that is needed to develop the appropriate policies and incentives to capture and market the benefits of REDD+.

Identifying areas with high carbon benefits, as well as those with high co-benefits, requires tools to assess where these occur geographically and where they are spatially correlated. To ensure national ownership of any list of identified areas, this also requires a stakeholder and expert process, driven by government. A technical expert group will be established to develop best practice methods. Furthermore, identifying areas with high risks of deforestation and forest degradation will not result in the exclusion from eligibility of protected areas. This is because protected areas suffer from poor management, lack of adequate resources including for enforcement, which make them unable to adequately protect forest species and ecosystems.

Benefit sharing to local forest dependent communities

To quantitatively and objectively monitor the benefit sharing of REDD+ initiatives to local forest-dependent communities, information collection systems will be developed during R-PP implementation to gather relevant information. Besides the standard carbon stock mapping, some of this information-gathering will be linked to activities conducted in the social and environmental impact assessment systems developed under component 2d. Financial resources may accrue from projects of a worldwide performance-based carbon market mechanism. . The money accruing will go to the legal entities; or recognized local community

organizations. Only legal entities which manage the forested areas and have legal user rights of forest areas are eligible to receive benefits. These are:

- Forest user cooperative
- Forest user association
- Forest enhancer and user local community

The list of legal entities could be expanded with other forest (related) entities, like:

- National park
- Forest plantation
- Etc.

- Administrative/forest demarcations During R-PP implementation, areas owned/managed by the various legal entities will be demarcated and mapped.

Once this mapping is complete they will be combined and form a REDD benefit sharing indicator:

$$Benefit\ \ sharing\ indicator = \frac{Investment\ or\ reward}{Carbon\ emission * Area} \qquad (US\$/kg\ C/ha)$$

Once the benefit sharing indicators are calculated for all legal entities, analysis within or among the different legal entities can be performed, revealing the extent of benefit sharing.

Besides the benefit-sharing indicator, local forest dependent communities will be trained to undertake forest inventories. This is designed both to strengthen sense of ownership over the MRV process and to lower any local suspicion about the purposes of inventories. Also it has been proven that community-based forest inventories cost less than professional surveys and accuracy can be of similar levels (Angelsen et al., 2009).

Other non-carbon benefits

Apart from the already mentioned co-benefits (biodiversity, benefit sharing) a number of other non-carbon variables can be identified. Specifically mentioned are here:

- Water filtering; forests naturally filter and recharge ground water reservoirs.
- Flood protection; forests act like giant sponges, slowing the flow of surface water and reducing the impact of flooding.
- Recreation/tourism: Forests offer a recreational function , which can be exploited by tourism facilities. Especially the national parks with natural high forest and high biodiversity offer great opportunities for (international) eco-tourism.

The loss of these non-carbon values should be monitored as well. It can be monitored by mapping of the forest area changes over time. It can also be monitored in economic terms as a cost-benefit analysis of the loss of services. For example by calculation of costs for a water purification plant as replacement for the water filtering services of forests, or the loss of tourist income from national parks.

Country specific issues

Since land-cover mapping and forest inventories are already foreseen in the MRV system, it is relatively easy to expand these existing techniques with country-specific wishes. During the stakeholder consultations the following topics were mentioned:

- Mapping of coffee forest
- Inventory of bee hives within forest area

- Inventory of specific medicinal herbs and plants within forest area
- Mapping of Bamboo forests

Monitoring of key drivers

REDD requires monitoring of the net carbon stock change through remote sensing mapping and forest inventories as worked out in the section above. However, to understand the underlying drivers better and to able to anticipate to them, it is necessary to differentiate and allocate the mapped net carbon stock changes to the 5 direct driver processes as identified in Components 2 and 3. The following approach could be used to allocate the carbon stock changes to the appropriate driver:

- Expansion of traditional agriculture. This activity is a continuously going-on process along the borders of the forests. Small patches and stripes of forests are (partly) cleared and cultivated. It can be mapped relatively easy by remote sensing. Some overlap with the fourth driver "wood extraction" might occur, as in general the forests are degraded first by wood extraction, where after the degraded forests simply are taken into cultivation.
- Expansion of large scale development activities. This activity is characterized by sudden changes in land use at a large scale. Typically, rectangular blocks of forest (or other natural lands) are cleared and taken into cultivation, which is easily recognised and mapped by remote sensing.
- Settlement programs. As population growth is still significant in Ethiopia, there is a constant need to migrate people form densely populated areas to less populated areas. The settlement programs guiding this process can be monitored by remote sensing. They are characterised by sudden changes in land use. The new settlements can be detected by medium resolution (Landsat) satellites as well as the surrounding cultivated plots. Unlike the large scale investment programs the newly cultivated areas are not large rectangular blocks, but more irregularly shaped and diverse. It is relatively easy to monitor them by remote sensing.
- Wood extraction & other forest products collection. This activity is characterised as a gradual process from undisturbed forest towards cleared areas in the end. The extraction of the wood and forest products itself is hard map with remote sensing techniques as crown cover is in the first stages of the process still intact. However, indicators like new small paths/roads and logging areas may appear in the forest. Once these infdicators are detected, a forest invertory should reveal to what extent the forest is exploited or degraded and what is the volume of wood extraction.
- Forest fires. Burned areas are easily recognizable by remote sensing techniques as their spectral signature (black/grey areas without any green vegetation) is very different from forests.

Table 34 List of indicators to map the direct drivers **and non-carbon variables**

To allocate the monitored carbon changes to the direct driver process the following discrimination rules can be used:

Direct Driver	Carbon indicator	Additional mapping information
Expansion of traditional agriculture	Net carbon stock change	Small patches/stripes of forest are cleared; continuous process.
Expansion of large scale development	Net carbon stock change	Sudden changes in land use. Large rectangular blocks of forest are cleared.

activities

Settlement programs	Net carbon stock change	Sudden changes in land use. Settlements appear.
wood extraction & other forest products collection	Net carbon stock change	Roads and small logged areas appear. Forest inventories are crucial for quantification.
Forest fires	Net carbon stock change	Classification of burned areas

Table 35 Monitoring non-carbon variables

Similarly the non-carbon variables to be monitored can be quantified as follows:

Non-carbon variable	Carbon indicator	Additional monitoring indicators
Good governance	No negative change in forest area (national parks) and carbon stocks	Increased volume of certified wood Increased number of kebeles with PFM
Biodiversity		Number of plant/animal species Extent of ecological network
Benefit sharing		Economic revenues per kg C per administrative unit (kebele, wereda, etc.) Number of local community members involved in monitoring
Water services (purification and flood protection)		Cost-benefit analysis
Eco-tourism		Cost-benefit analysis

Institutional set-up

As Ethiopia moves into the readiness phase, it must establish the organizational capacity to operate a national and/or sub national forest carbon MRV programme efficiently and sustainably. The requirements for a national institutional framework for MRV are (i) coordination, (ii) monitoring, (iii) reporting and (iv) verification.

Relevant organizations

The following organizations are most relevant to play a role in a future MRV system for Ethiopia and their suitability and capacity challenges will be assessed further during the R-PP implementation phase:

Table 36 Most relevant organization in future MRV

Organisation	Full name	Task	MRV expertise
REPAs	Regional environmental protection agencies	Sub-national or regional level monitoring reporting, verification of sustainable forest management and compliance with and enforcement of policies, strategies and regulations	capacity need assessment has to be conducted

Organisation	Full name	Task	MRV expertise
BoARD	Bureaux of Agriculture and Rural Development	Sustainable forest management	Land Administration Unit
MoME	Ministry of Mines and Energy	Sustainable energy supply	Involved in the first phase of WBISPP project, specifically in the energy component.
MoWR	Ministry of Water Resources	River basin management	Expertise on land cover (forests) within river basins
FEPA	Environmental Protection Authority	Formulation, compliance support, monitoring, reporting, verification of sustainable forest management and related national policies, strategies and regulations.	REDD coordinator MRV unit with medium level (as defined in this document) GIS and Remote Sensing experience
EMA	Ethiopian Mapping Agency	Main mapping centre using GIS and Remote Sensing in Ethiopia Main topographic mapping centre	Medium level (as defined in this document) GIS and Remote Sensing expertise
EWCA	Ethiopian Wildlife Conservation Authority	Management of national parks & wildlife sanctuaries	No GIS and Remote Sensing Expertise
CSA	Central Statistics Authority	National statistics centre	Remote Sensing experience on census unit area mapping
FRC - EARI	Forestry Research Centre - Ethiopian Agricultural Research Institute	Main expertise centre on forest research	Forest inventories
IBC	Institute of Biodiversity Conservation	Main expertise centre on biodiversity	Inventories and conservation of plant, animal and microbial biodiversity
MU	Mekelle University	Dryland agriculture and biodiversity	Woody biomass inventories
WGCF	Wondo Genet College of Forestry	Forestry research	Expertise in forest inventory
HoAREC	Horn of Africa Regional Environment Center	Promote agroforestry Rehabilitation of degraded areas	Land cover mapping
ISD, Farm-Africa/ SOS Sahel Ethiopia	Institute of Sustainable Development , Farm-Africa/ SOS Sahel Ethiopia	Bale Mountains Eco Region Sustainable Management Project (ERSMP)	Includes land cover mapping, forest inventories and carbon accounting studies
FZS	Frankfurt Zoological Society	Bale Mountains National Park (BMNP) project	Includes land cover mapping, forest inventories and carbon accounting studies
CSO at each	Varies	Varies	Unlikely to have any, will have

Organisation	Full name	Task	MRV expertise
Woreda			to be trained
NGO supporting each Woreda, if found	Varies	Varies	Unlikely to have any, will have to be trained

Coordination

A high-level national coordination and cooperation mechanism should be established to:

- Link forest carbon MRV system to the national policy for REDD+
- Specify and oversee roles, responsibilities and co-benefits, and other monitoring efforts

A REDD steering committee is already established and will be responsible for the coordination task as well. FEPA and representatives of Regional EPAs will play key roles in this steering committee regarding the MRV system. If and when a dedicated federal agency for forestry is created, it will take the active leadership from EPA, which will then continue with its regulatory role.

Monitoring

As explained, monitoring has two components. The following organizations have (some) experience in forest monitoring:

Table 37 Potentially suitable monitoring partners

Monitoring part	Work content	Potentially suitable partner
Activity data	Mapping of forested areas with remote sensing	• FEPA with input from independent monitor EMA Universities Farm-Africa/SOS Sahel Ethiopia NTFP-PFM Project Frankfurt Zoological Society Some community based organisations have also been involved in some aspects of this work and could be suitable partners.
Emission factors	Forest inventories	FEPA with input from independent and accredited body FRC IBC Universities ISD Farm-Africa/SOS Sahel Ethiopia NTFP-PFM project Frankfurt Zoological Society Some community based organisations have also been involved in some aspects of this work and could be suitable partners.

Reporting

Reporting in the national carbon monitoring system will be done for historic and future monitoring purposes. This involves the use of reference scenarios that will be set in Component 3. Specifically, reporting will be done in the following key areas: forest area change assessment, changes in carbon stocks and results of verification and uncertainty assessment. Reporting is typically divided in two parts:

Reporting in Tabular formats: These are a series of standardized data tables that contain mainly quantitative information. Typically these tables include columns for:

- Initial (reference) and final land-use category. Additional stratification is possible according to criteria such as agro-ecological zones, administrative units, soil type, etc.
- Activity data, i.e. area of land subject to gross deforestation and degradation, or to forest enhancement.
- Emission factors, i.e the C stock changes per unit area deforested or degraded, or to forest enhanced, separated for each carbon pool.
- Total change in C stock and CO2 emissions obtained by multiplying each activity data by the relevant emission C stock change factor.

Descriptive report: the other part of a national monitoring report is a descriptive report that contains descriptive, comprehensive and transparent information about the inventory, including:

- A list of definitions
- An overview of trends for C stock emissions
- A description of the used methodologies
- A description of the key categories
- Information on uncertainties
- A description of institutional arrangements for inventory preparation
- Information on planned improvements

As the reporting unit has to produce a carbon monitoring report, it is also responsible for collecting the monitoring data (land cover maps and forest inventories) and analysing it in order to produce the required reports. Therefore, coordination of the two monitoring units will be part of the responsibility of the reporting unit as well. The reporting unit can be renamed as reporting/analysis/coordination unit with FEPA as most suitable candidate.

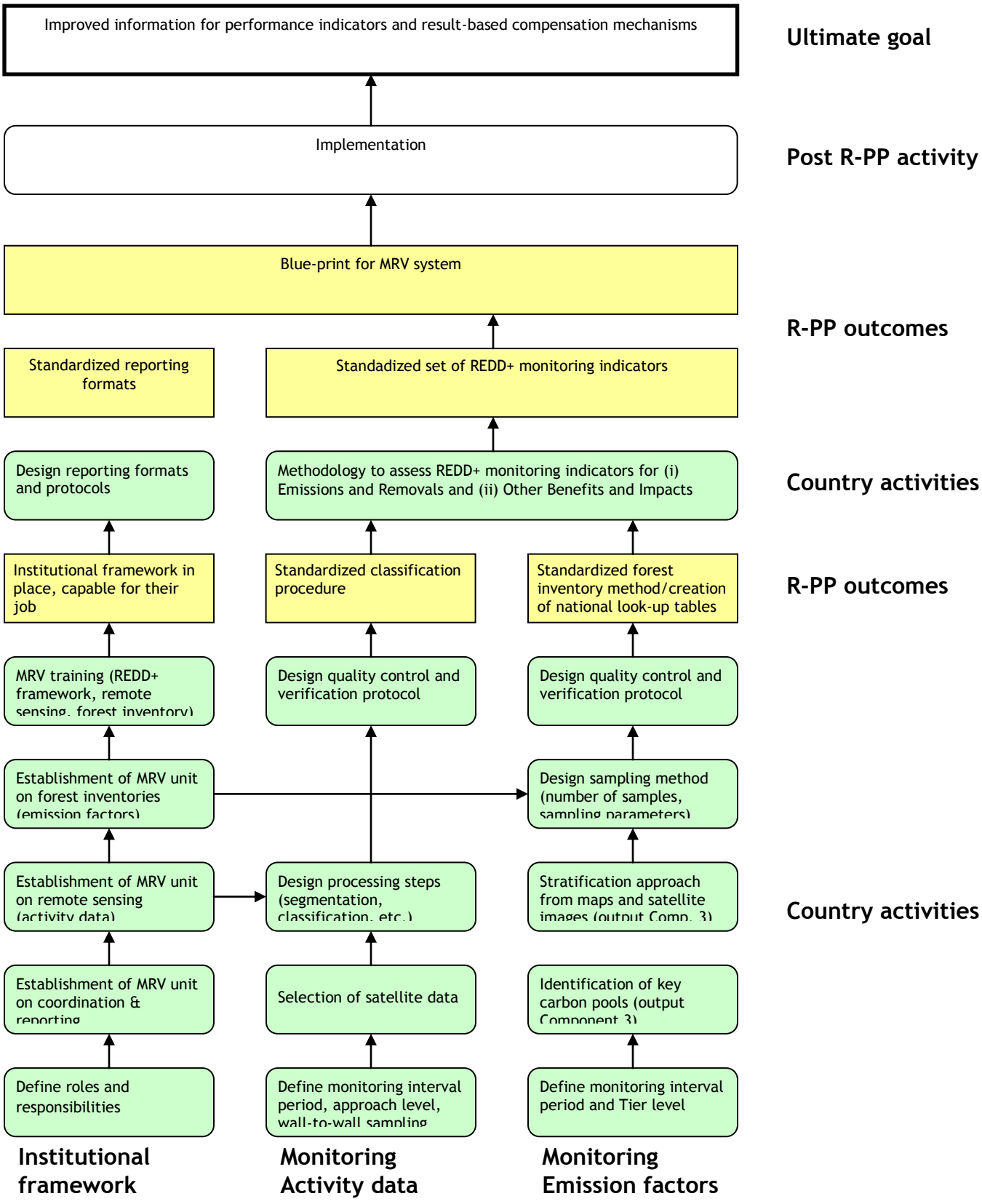
Verification

External audits will be conducted for all aspects of the MRV system when the REDD or REDD+ initiative has been financially supported. All components of the MRV system are expected to be in compliance with the latest IPCC Good Practice Guidelines. This compliance will be strictly enforced. These external audits will be conducted by a qualified party that was not involved in the MRV systems development or implementation.

Terms of reference

In accordance with Component 3 the information in Component 4 can be formulated as Terms of Reference as follows:

Figure 28 Outline of activities for development of MRV system



Step 4. 1 - MRV training (REDD+ framework, remote sensing, forest inventories) ; see Step 3.1

Step 4.2 - Inventory of available data and methods; see Step 3.2

Step 4.3 - Development of a standardized classification procedure

A standard classification procedure has to be developed; the following processing steps will form a generic standardized procedure.

- Approach 3 will be applied. Revisit time will be 5 years for the high forest and dry wood lands. Areas under threat of deforestation of forest degradation will be sampled at least bi-annual; this will include all remaining natural high forest in Ethiopia (approximately 3 % of total area)
- Selection of satellite imagery. Based upon price, quality (resolution, cloud affected, etc.) and availability (daily, weekly, monthly, etc.) the type of satellite images will be selected. Most probably free available Landsat images will be used with additional use of SPOT images and/or PALSAR radar images in areas with no Landsat cover of cloudy conditions.
- Preprocessing (geo-referencing, radiometric correction, possible rescaling to uniform resolution)
- Segmentation of rather homogeneous areas.
- Classification (supervised vs. unsupervised). A combination of automated digital classification with human interpretation and correction is likely to be the most accurate and efficient approach to land cover change mapping.
- Additional classification rules, based upon extra information, like GIS layers (parcels, roads, administrative units, etc.), DEM, soil maps, etc. would enlarge the quality land cover classification substantially.
- Quality control and verification
- Mosaicing

Step 4.4 - Development of a standardized forest inventory method

Based upon WBISPP results and methods regarding forest inventories a standardized forest inventory method will be established. The following issues should be tackled:

- At least Tier level 2 will be applied. Revisit time will be 5 years for areas under threat of deforestation of forest degradation (20% per year)
- Identify key carbon pools
- Stratification approach, based upon existing land cover maps and satellite images
- Above ground tree biomass (non-destructive measurements (tree density, specimen, DBH) vs destructive measurements).
- Below ground tree biomass will be sampled as well. Tee root biomass will be sampled.
- Quality control and verification
- Creation of national look-up table

Step 4.5 – Methodology to assess REDD+ monitoring indicators

The methodology to assess the changes of the carbon pools and co-benefits over the defined period, will be based on the REDD+ monitoring indicators described in Table and the paragraphs afterwards.

Step 4.6 Reporting of REDD+ monitoring indicators

The results will be reported according to standardized reporting format (see section on reporting in this Component)

Step 4.7 Verification

The verification process of the REDD+ indicators and results will be externalized to an independent body.

Step 4.8 Institutional setup of the MRV system

The following MRV units have to be established within Ethiopia:

- MRV coordination/ analysis/ reporting responsibilities unit
- MRV monitoring – remote sensing unit
- MRV monitoring – forest inventories unit

It is obvious that the capacities needed for measuring, monitoring and evaluating REDD+ projects and programmes are exactly the same as those required by for building REDD and REDD+ indicators, and also to that of the requirements for reference scenarios i.e. Table 26. It should be emphasized, however, that the persons who develop the reference scenarios cannot be allowed to also monitor and verify the validity of the outcome of their own work, though the same equipment and supplies can be used for both activities.

Table 38 Summary table of actions to design a monitoring and evaluation system

Gap / Challenge Analysis	Proposed action plan to develop MRV System					
	Action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing in years**
Monitoring capacities missing	**4.1. Develop capacity for REDD monitoring framework (IPCC guidelines, LULUCF, carbon stock accounting, etc.)**	Contracted international consultant National REDD+ stakeholder institutions	• Training, lectures	Qualified experts that can undertake carbon trading	• REDD+ monitoring framework developed	2011-2013
	4.2. Develop capacity in remote sensing techniques (pre-processing, segmentation, land cover classification, etc.)	National and international remote sensing training institutions National, regional and woreda/kebele REDD+ stakeholder institutions	• Training, pilot projects • Field level training • Study tours	Qualified experts that can undertake remote sensing image interpretation and analysis	• No. of experts trained on MRV tools and methods • No. and type of international carbon accounting tools/methods included in the trainings • No. of trainings/study tours given and quality of training provided	2011-2013
	4.3. Remote sensing and GIS facilities (software,	National, regional and woreda/kebele	• Purchase hardware and software	Software, plotter, navigation	• No. and type of remote sensing hardware & software acquired	2011

Gap / Challenge Analysis	Proposed action plan to develop MRV System					
	Action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing in years**
	plotter, navigation equipment, satellite images, etc.)	REDD+ stakeholder institutions		equipment, satellite images, etc.		
Different projects / datasets/ approaches are not linked	4.4 Review available date sources	Similar as above	• Literature review, interviews, consultations, etc.	Detailed overview of available data Database with existing data (satellite images, forest inventories, etc.)	• No. and type of review/interviews/consultations done • Dedicated database of information	2011
	4.5 Development a standardized classification procedure	Similar as above	• Procedure, decision structure	Standardized classification method	• Standardized classification method	2011-2012
	4.6 Development of a standardized forest inventory method	Similar as above	• Procedure, decision structure	Standardized forest inventory method	• Standardized forest inventory method	2011-2012
	4.7 Assessment of REDD+ indicators	Similar as above	• Analysis, reporting	Quantified REDD+ indicators	• Availability of indicators	2012-2013
	4.8 Reporting	Similar as above	• Reporting	Reporting according to international	• Reporting format	2012-2013

Gap / Challenge Analysis		Proposed action plan to develop MRV System				
	Action	**Entity Responsible**	**Method**	**Outcomes**	**M&E key indicators**	**Timing in years**
				standards		
	4.9 Verification	External body	•	External audits	• External audits	2013
Lack of institutional framework	**4.10 Develop MRV coordination/ analysis/ reporting responsibilities**	FEPA, MoCT, MoA FRC, IBC, universities	• Dedicated staff and facility	Effective coordination/analysis/reporting	• Dedicated MRV staff and facility/unit	2011-2013
	4.11 Develop MRV monitoring – remote sensing unit	FEPA, EMA, universities	• As per the agreed National MRV methodology	Effective remote sensing analysis for national MRV		2011-2013
	4.12 Develop MRV monitoring – forest inventories unit	FEPA, MoA FRC, IBC, universities	• As per the agreed National MRV methodology	Effective forest inventories for national MRV		2011-2013

Table 39 Budget of Monitoring Activities

Note: elements already budgeted as part of Component 3, but that will be leveraged to develop monitoring activities, are not presented again in the following table.

Monitoring Activities and Budget						
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands)**				
		2011	**2012**	**2013**	**2014**	**Total**
Conducting pilot projects on MRV System	4.1 Review available data sources	30	10	-	-	40
	4.2 Development of a standardized classification procedure	20	10	-	-	30
	4.3 Development of a standardized forest inventory method	20	10	-	-	30
	4.4 Assessment of REDD+ indicators	-	20	15	-	35
	4.5 Reporting	-	20	15	-	35
	4.6 Verification by an independent body	-	-	100	-	100
Building institutional framework	Recruitment, training and salary of staff of MRV coordination/ analysis/ reporting units	50	100	100	50	300
	Remote sensing unit: recruitment, training and salary of staff, technical maintenance	50	100	100	50	300
	Forest inventories unit: recruitment, training and salary of staff of MRV monitoring, technical maintenance	50	100	100	50	300
Total		**220**	**370**	**430**	**150**	**1170**
Government		20	30	30	15	95
FCPF		20	20	50	5	95
UN-REDD Programme		70	125	120	50	365
Nordic Climate Facility-NCF		90	145	160	70	465
French Development Agency-AFD		20	50	70	10	150

Component 5: Schedule and Budget

Table 40 provides the schedule and budget for the different R-PP components.

Table 40 Schedule and Budget

Table 5: Schedule and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands) $				
		2011	2012	2013	2014	Total
1. Organize and Consult	1a. National Readiness Management arrangements	260	300	130	90	780
	1b. Stakeholder consultation and participation	695	815	330	80	1920
2. Prepare the REDD+ strategy	2a. Assessment of Land Use, Forestry Policy and Governance	480	140	40	-	660
	2b. Develop REDD+ Strategy Options	2160	1430	980	290	4860
	2c. Design REDD+ Implementation Framework	750	440	155	-	1345
	2d. Social and Environmental Impacts	235	115	130	-	480
3. Develop a Reference Scenario		1440	780	400	50	2670
4. Design a Monitoring System		220	370	430	150	1170
6. Design a Monitoring and Evaluation Framework		70	110	30	20	230
Total		6310	4500	2625	680	14,115
Government		530	400	155	90	1175
FCPF		1525	1215	520	140	3400
UN-REDD Programme		1655	1100	725	150	3630
Nordic Climate Facility-NCF		2090	1395	980	230	4860
French Development Agency-AFD		510	390	245	70	1215

Component 6: Design a Program Monitoring and Evaluation Framework

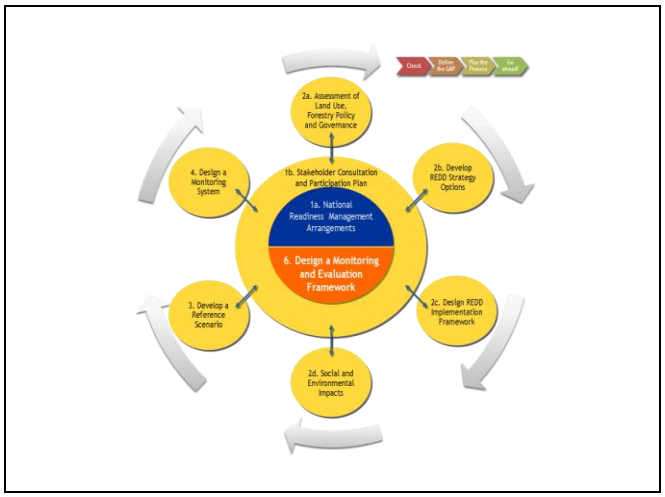


Figure 29 Component 6 in the REDD readiness wheel

The purpose of the Program Monitoring and Evaluation (M&E) framework is to encourage efficient and transparent management of resources. The M&E framework is a tool that will help the REDD+ steering committee and REDD+ technical working group to keep track of Ethiopia's progress towards readiness and to identify and address gaps, shortfalls, and program underperformance as they emerge. It also serves to provide real time feedback to the government and other stakeholders on how well the preparatory work towards REDD+ readiness is progressing. The Program M&E framework forms a central part (see Figure 29) of the REDD+ readiness arrangement as it helps to monitor progress with respect to the TOR of each component. In this way the monitoring framework will build on the indicators identified in each R-PP component. SMART (Specific, Measurable, Achievable, Relevant and Time-bound) indicators for the components will be further defined at the beginning of the REDD+ strategy development and will continue to be improved during the R-PP implementation. This will be supported through the logical framework analysis proposed in part 2b. As part of the national M&E framework clear communication and reporting channels between the different actors will be established to support a transparent flow of information. This element has a close link to the communication framework that is proposed in Component 2c of the R-PP.

The Programme Monitoring and Evaluation of the REDD+ economic and environmental sector will help the Government of the Federal Democratic Republic of Ethiopia to continue evaluating the performance of the various economic sectors of the country in the way towards a sustainable carbon neutral development trajectory being achieved by 2025.

The process of building the Programme Monitoring and Evaluation of the REDD+ will benefit from coordination with the Climate Resilient Green Economy initiative, as the CRGE initiative is going to develop a comprehensive system to monitor and evaluate the progress of green growth activities in each of the 8 sectors it covers. This will be an opportunity to share tools, best practices and capacity.

Table 41 Action plan M&E Framework setup

	M&E framework				
What to assess	**Groups to involve**	**Method**	**Outcomes**	**Key Indicators**	**Timing**
1. Identify responsibilities within the national readiness management arrangements for M&E	• REDD+ Secretariat and RTWG	• Workshops	• Responsibility of Me&E is defined within the National Arrangement	• A designated body for M&E	2011-2012
2 Establish baseline data for M&E	• REDD+ Secretariat and RTWG	• Survey/on site assessment & secondary information	• Baseline data established	• Baseline data quality and quantity	2011-2012
3. Set up and agree process and content of reporting	• REDD+ Secretariat and RTWG	• Workshops and focus group discussion	• A process and content of reporting of M&E are established	• Process and content flowchart/checklist of reporting	2011-2012
4. Define indicators for each action in the REDD strategy (see Component 2a-2d)	• REDD+ Secretariat and RTWG	• Logical framework analysis	• SMART indicators defined for each activity in the REDD strategy before implementation	• Quality and quantity of indicators established	2011-2012
5. Define evaluation criteria	• REDD+ Secretariat and RTWG	• Workshops and focus group discussion	• Provides tool for analysis	• Evaluation criterias/checklists used	Ongoing
6. Share information between the different actors	• REDD+ Secretariat and RTWG • All actors involved in REDD+ activities	• Use tools of the participatory process as outlined in Component 1b	• Everybody is informed and can take action	• Quantity and quality of information shared • Information dissemination tools/technologies used	Ongoing
7. Evaluate information and identify where action is not on track	• REDD+ Secretariat and RTWG	• Workshops and focus group discussion	• Evaluate that everything is on time and on track	• No. of evaluation • Type and No. of evaluation tools/techniques used	Ongoing

8. Provide feedback to actors and adjusting measure taken where actions are not on track	• REDD+ Secretariat and RTWG • All actors involved in REDD+ activities	• Use tools of the participatory process as outlined in Component 1b	• Feedbacks provided and adjustment measures done where applicable	• Quantity and quality of feedbacks gained/provided • No. and type adjustment measures taken	Ongoing
9. Set up transparent financial and other resources management system	• REDD+ Secretariat and RTWG	• National accounting and auditing system	• Effective and transparent financial management system established	• Quality and content of financial and other resources management tools	2011-2012

Table 42: Summary of Program M&E Activities and Budget					
Main Activity	Estimated Cost (in thousands)				
	2011	2012	2013	2014	Total
1.Identify responsibilities within national readiness arrangements for M&E	10	10			20
2. Establish baseline data	10	20			30
3.Set up and agree process and content of reporting	10	10			20
4.Define indicators for each action in the REDD strategy (see Component 2b)	10	20			30
5.Define evaluation criteria	10	10			20
6. Share information between the different actors		10	10		20
7. Evaluate information and identify where action is not on track	10	10	10	10	40
8. Provide feedback to actors and adjusting measure where actions are not on track	10	10	10	10	40
9. Set up financial and other resources monitoring system		10			10
Total	70	110	30	20	230
Government	10	10			20
FCPF	20	50	20	20	110
UN-REDD Programme	20	20	10		50
Nordic Climate Facility-NCF	20	20			40
French Development Agency-AFD		10			10

Annexes

Annex 1a: National Readiness Management Arrangements

Action plan of activities to be conducted by Ethiopian government's REDD Secretariat during f the R-PP development phase between April 2010 and March 2011.

Table 43 Action plan of activities between April 2010 and March 2011

No	Major Action	Method	What to do	Who will do	Where	Who responsible	Timeframe
1	1.1 Launching workshop/first stakeholder workshop (national)	Multi-stakeholder workshop	• Provide information on REDD and consult on R-PP • Stakeholders analysis • Drivers of deforestation	RSC, RTWG other stakeholders (NGOs, sectoral ministries, donors, private sector, consultants, universities, etc)	Addis Ababa (national)	FEPA-REDD Focal Point	April 29&30, 2010
	1.2 second stakeholders consultation workshop (national)	>>	• Review components of draft R-Plan • R-PP management Arrangement • RSC[15] and RTWC[16] TOR and action plan	>>	>>	>>	June 17&18, 2010
2	One day meeting of designated RSC and RTWG	Joint meeting	Meeting to finalize: •TOR for RTWG&RSC •Action Plan for RTWG up to March 2011 •Composition of both RSC&RTWG	RSC&RTWG jointly	Adds Ababa	REDD Secretariat	June 29, 2010

[15] REDD Steering Committee

[16] REDD Technical Working Group

No	Major Action	Method	What to do	Who will do	Where	Who responsible	Timeframe
			•Developing REDD communication materials, leaflets, etc and use of TV and Radio channels				
3	Two days training/ experience sharing on Consultation and Participation mechanism	Training/ experience sharing	Training/ experience sharing for RTWG by: • Farm Africa PFM Team • FAO-NTFP project Team and NGOs	REDD Secretariat, RTWG, Farm Africa PFM Team, FAO-NTFP project Team and NGOs	Addis Ababa	REDD Secretariat	Between 6th and9th of July, 2010
4	Submission of draft R-PP	Submitting via email for review by RTWG	Review	Consultants	Addis Ababa	REDD Secretariat and RTWG	July 6th 2010
5	5.1 Review of draft R-PP by RTWG and provide comment on the R-PP	Local Consultant and RTWG review	•Reviewing of the R-Plan by local consultant •Convening of two RTWG meetings to review the consultant report and provide a consolidated comment	• Local consultant • RTWG • REDD secretariat	Addis Ababa	REDD Secretariat & RTWG	Between 7th July and 5th of August, 2010
	5.2 A review of the R-Plan By RSC	Review meeting	• Convene a one day review meeting • Hear the consultant report • Provide further comment to be incorporated in the R-Plan	• Local consultant • RSC • REDD secretariat	Addis Ababa	REDD Secretariat	Between 6th and 9th of August, 2010
6	Send the RTWG & RSC reviewed (commented) R-PP to Consultants	electronic	Send comment	REDD Secretariat	-	REDD Secretariat	August 11th 2010
7	Regional consultations (first round)	Multi-stakeholder workshops	• Provide information on REDD and consult on R-PP • Check mechanism and existing institutions for stakeholder participation during the R-PP development and REDD strategy development phase	• RTWG (focus group of Oromia, Amhara, SNNPRS and Tigray) • NGOs (Farm Africa and NTFP project)	• Oromia • SNNPRS • Tigray • Amhara (At least 1 in each	REDD Secretariat and TWG	July 10 to August 10, 2010

No	Major Action	Method	What to do	Who will do	Where	Who responsible	Timeframe
			• Get feed back on drivers of deforestation and the draft R-PP • Establish regional REDD TWG (RRTWG)		Region)		
8	Local level consultations (First round) • Woreda level multi-stakeholder consultation • Forest dependent people consultation	Multi-stakeholders and forest dependent stakeholders workshops (back to back workshops)	• Provide information on REDD and consult on R-PP • Check mechanism and existing institutions for stakeholder participation during the R-PP development and REDD strategy development phase • Get feed back on driver of deforestation and the draft R-PP • Establish Woreda REDD TWG (WRTWG)	• RTWG (focus group of Oromia, Amhara, SNNPRS and Tigray) • NGOs (Farm Africa and NTFP project)	At least 1 Woreda and Forest dependent stakeholders workshop in each Region (4 local workshops)	REDD Secretariat and TWG	July 10 to August 10, 2010
9	Establishing communication channels for REDD consultation through TV , Radio, brochures and leaflets and the global canopy program	TV, Radio, brochures and leaflets, internet website/web-page	• Capturing regional and local level consultation programs (including community feedbacks) through radio and TV • Publish and distribute awareness brochures and leaflets • Engage on global canopy program (exchange of information through internet)	• ERTA/Walta Information P.L.C • Radio Fana/local radio • Local consultants • Global canopy-climate change • RTWG	Addis Ababa, Regions (7 regions) and Woredas (7 Woredas)	REDD Secretariat and TWG	July to December, 2010
10	Incorporating regional and local level consultation feedback in the draft R-PP	Consultative meeting of RTWG (Regional focus Group)	• Consolidate feed back from all regional and local level workshops, and consultation using communication channels. • Incorporate feed back in R-PP • Send further reviewed R-PP to consultants for finalization	• RTWG (focus Group)	Addis Ababa	REDD Secretariat and TWG	August 5 to August 10, 2010

No	Major Action	Method	What to do	Who will do	Where	Who responsible	Timeframe
11	Submission of informal Draft R-PP to FCPF	Informal submission	• First informal draft of R-PP will be submitted to FCPF for review and feedback	• RTWG • REDD Secretariat	Addis Ababa	REDD Secretariat	23 rd August, 2010
12	Feedback from FCPF	informal	• Feedback of FCPF	• FCPF-WB	Addis Ababa	FCPF	September 2010
13	Presentation of draft R-PP at Participant Committee Meeting	Presentation	• Presentation of R-PP • Get feedback	• REDD Secretariat	TBD	FCPF/ REDD Secretariat	November 2010
14	Regional consultations (second round)	Multi-stakeholder workshops	• Provide information on REDD and consult on R-PP • Check mechanism and existing institutions for stakeholder participation during the R-PP development and REDD strategy development phase • Get feed back on drivers of deforestation and the draft R-PP • Establish regional REDD TWG (RRTWG)	• RTWG (focus group of Benshangul Gumuz, Gambella and Somali) • NGOs (Farm Africa and NTFP project)	• Benshangul Gumuz • Gambella • Somali (At least 1 in each Region)	REDD Secretariat and RTWG	15 September to 15 November, 2010
15	Local level consultations (Second round) • Woreda level multi-stakeholder consultation • Forest dependent people consultation	Multi-stakeholders and forest dependent stakeholders workshops (back to back workshops)	• Provide information on REDD and consult on R-PP • Check mechanism and existing institutions for stakeholder participation during the R-PP development and REDD strategy development phase • Get feedback on driver of deforestation and the draft R-PP • Establish Woreda REDD TWG (WRTWG)	• RTWG (focus group of Benshangul Gumuz, Gambella and Somali) • NGOs (Farm Africa and NTFP project)	At least 1 Woreda and Forest dependent stakeholders workshop in each Region (3 local workshops)	REDD Secretariat and RTWG	15 September to 15 November, 2010
16	Incorporating	Consultative	• Consolidate feedback from all regional and local level	• RTWG (focus Group)	Addis	REDD	16

No	Major Action	Method	What to do	Who will do	Where	Who responsible	Timeframe
	regional and local level consultation feedback in the draft R-PP	meeting of RTWG (Regional focus group)	workshops, and consultation using communication channels. • Incorporate feed back in R-PP		Ababa	Secretariat and RTWG	November to 30 November 2010
17	Final review of the R-Plan By RSC	Review meeting	• Convene a one day review meeting • Hear the RTWG report • Provide further comment to be incorporated in the R-Plan • Send the R-Plan to Consultant for Finalization	• RSC • RTWG • REDD secretariat	Addis Ababa	REDD Secretariat	December 1-5, 2010
18	UNFCCC-COP side event hosting	Exhibition and Presentation	• Displaying posters, published materials, etc regarding REDD Readiness Ethiopia • Side event (conference) presentation • Discussion and feedback	• REDD Secretariat and RTWG	TBD	REDD Secretariat and RTWG	December 2010
19	Formal submission of Draft R-PP	Formal Submission	• Formal submission	• Ethiopian Government/ FEPA	FCPF/ Washington	• Ethiopian Government/ FEPA	January 2011
20	Decision by FCPF	Formal	• Formal response	• FCPF	Washington/Addis Ababa	• FCPF	March 2011

Annex 1b-1: Stakeholder Consultations Held So Far on the R-PP

National level consultations conducted by 26.12.2010

- 1st national consultation workshop - 29th and 30th of April in Addis Ababa
- 2nd national consultation workshop 17th and 18 June in Addis Ababa

Focus group discussions in the regions

Amhara Region
- Regional level consultation, Date: August 02&03, place: Bahir Dar Town
- Woreda (district) level consultation, August 05&06, place: Libo Kemkem Woreda, Addis Zemen Town
- Community level consultation: August 08, place: Tara Gedam Forest Community

Oromia Region
- Regional level consultation, Date: August 03&04, place: Dukem Town
- Woreda (district) level consultation, August 05&06, place: Dendi Woreda, Ginchi Town
- Community level consultation: August 07, place: Chilimo Forest Community

Southern Region
- Regional level consultation, Date: August 02&03, place: Hawassa Town
- Woreda (district) level consultation, August 05&06, place: Bensa Woreda, Bensa Town
- Community level consultation: August 07, place: Hamesho Berena Forest Community

Tigray Region
- Regional level consultation, Date: August 02&03, place: Mekelle Town
- Woreda (district) level consultation, August 05&06, place: Atsbi Wonberta Woreda, Atsbi Town
- Community level consultation: August 07 place: Desi' a Forest Community

Benshangul Gumuz Region
- Regional level consultation, Date: December 20&21, place: Asossa Town
- Woreda (district) level consultation, December 22&23, place: Asossa Woreda, Asossa Town
- Community level consultation: December 24, place: Agura Bero Forest Community (Abrahamo, Abendi Migida and Afa Megeli Kebeles)

Gambella Region
- Regional level consultation, Date December 20&21, place: Gambella Town
- Woreda (district) level consultation, December 22&23, place: Godere Woreda, Godere Town
- Community level consultation: December 24, place: Gelesha Forest Community

Somali Region
- Regional level consultation, Date: December 20&21, place: Jigjiga Town
- Woreda (district) level consultation, December 22&23, place: Gursum Woreda, Gursum Town
- Community level consultation: December 24 place: Beke Halo and Bushmen Forest Communities

North Gonder Zone

- Zonal level consultation, Date: March 7&8, place: Gonder Town
- Woreda (district) level consultation, March 10&11, place: Metema and Debark Woreda , Metema and Debark Town
- Communities level consultation: March 12 place: Forest Dependent Communities

Table 44 Face to face meetings or telephone interviews and questionnaires

Name of resource person	Institution	Contact details
SOS Sahel Ethiopia	Ben Irwin	sos.sahel@ethionet.net
CIFOR	Dr Habtemariam Kassa	habtekasa@yahoo.com
Forestry Research Center	Ato Worku Zewde	workuzew@yahoo.com
Institute for Sustainable Development	Sue Edwards	sustainet@yahoo.co.uk
Forestry Research Center	Adefires Worku	adefires@yahoo.com
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Annex 1b-2: Consultation and Participation Plan

Annex 1b- 2 I Supplementary information on the Consultation and Participation plan.

Additional information is provided according to the steps in the action plan.

1. Review of national management arrangements and final action planning.

The REDD Steering Committee and Technical Working Groups should be multi-stakeholder in nature. Having a multi-stakeholder team not only ensures different views are taken into consideration but may also raise the credibility of the REDD process – so that it is not seen as being driven by one stakeholder group. Within the team, it is important to have, build or bring in people with the skills to facilitate participation in REDD strategy development. It is strongly recommended to have a participation and consultation specialist on each technical working group.

Such a person should:

- Have no bias or political history/agenda that will influence people's participation.
- Understand the REDD development process.
- Be able to include all (weak and strong) stakeholders effectively in the process through appropriate use of methods and facilitation skills to contain the strong when need be and provide opportunity for the weak.
- Demonstrate flexibility in the use of approaches to participation in order to reach different stakeholders and achieve different aims.
- Recognize that mistakes can be a useful learning tool.
- Understand that building people's trust and confidence in the REDD strategy development process is crucial.
- Address and negotiate conflict, rather than avoid it.

2. Capacity building (especially Training of Trainers) on all aspects of REDD.

Topics for these Trainer of Trainers should be linked to the specific components, however some additional topics/support identified during the R-PP development process are presented below:

- Support/develop trainings related to participatory skills development (See justification for this in paragraph that follows).

- Understanding the link between sustainable forest management, local user rights and REDD+(Due to common misunderstanding that REDD is about protecting trees from

people). This will include a better understanding of REDD+ support as a complimentary option ie. part of the bundle of incentives in forest management including other forest products, and not as the overall solution.

The current supply for participatory skills in the forest sector is outstripped by the demand. This was revealed through personal communication with project managers of three participatory forest management projects in Ethiopia who have been trying to recruit Ethiopian professionals with strong participatory skill sets. To implement the participation and consultation plan effectively, awareness and capacity in participatory skills will have to be raised in Ethiopia. In the short term, the REDD Technical Working groups, plus the Regional level Technical working groups will be fully trained on the rationale for, skills and methods for consultation and participation. A specific recommendation from the R-PP consultation process(pers. Com. With CIFOR Ethiopia) was targeting support to the main Forestry College in Ethiopia at Wondo Genet to develop/enhance curriculum related to participatory forestry and participatory REDD strategy development. There are currently no curricula in Ethiopian colleges that are focussed on Participatory Approaches. As well as targeting the regular curriculum, this will include providing support to develop short customised professional training courses on these topics; for example, for decision makers in various key government ministries related to forestry who are not currently on the steering committee or technical working groups.

To ensure the capacity building initiatives are effective, the following tried and tested process structure for the trainings will be employed:

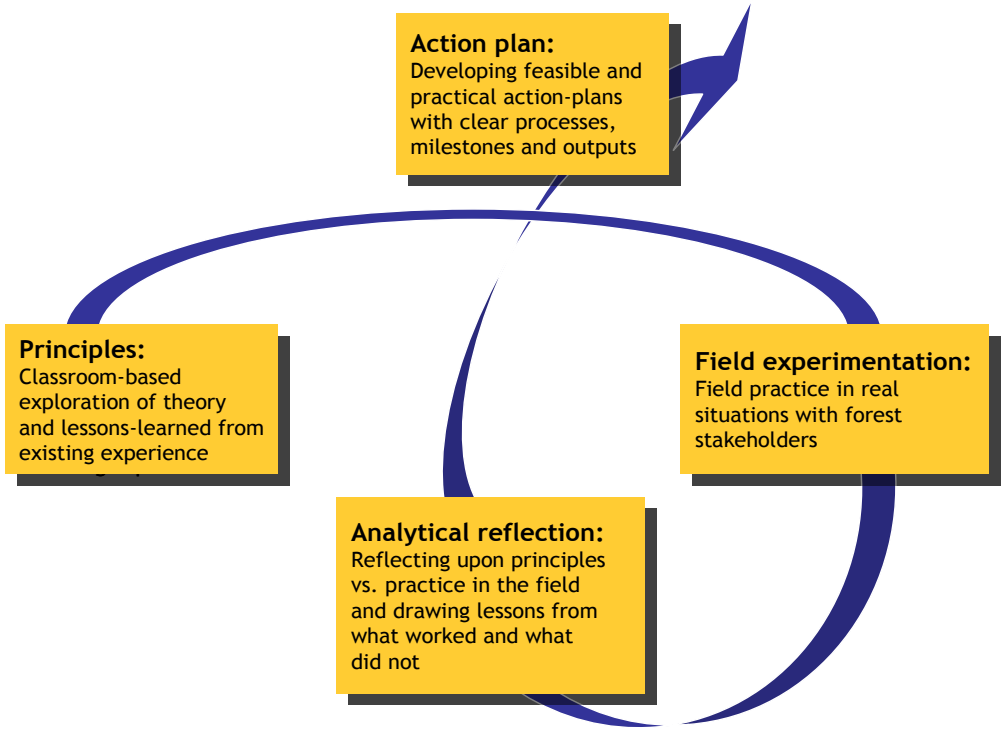


Figure 3 Cross cutting approach in capacity building

The Figure above outlines the cross-cutting approach that will be used in capacity building that will be applied in all components of the R-PP so that trainings test and adapt approaches

through field practice and reflect before developing the plan for application of the lessons which will be at the end of each training cycle.

3. Comprehensive stakeholder mapping and planning of consultations and Participation

Participation in and around the forest sector has already been taking place in Ethiopia notably in the various Participatory Forest Management initiatives, various policy consultations and a number of environmental forums. It is important to learn from and build on previous and ongoing experiences of multi-stakeholder fora and participatory processes from both within and outside the sector. The participatory REDD strategy development process should not create new structures and processes if existing ones can be used and/or improved. For example, entry points can take the form of existing sectoral working groups, linking with regional PFM working groups, etc.

The following questions will be taken into account when considering entry points:

- Have any fora brought forest-related stakeholders together before? Do any other multi-stakeholder fora exist from which lessons can be learned?
- Which stakeholders participated and how were different groups represented? How was a balance between weak and strong stakeholders achieved?
- Was the objective to include everyone, or just some parts of the sector? Were the participants the most relevant stakeholders? Should the participants be changed? Do others need to be added?
- Which mechanisms were used to enhance involvement and ability to negotiate and to communicate technical/specific knowledge?
- How successful were they in achieving effective outcomes? What problems or constraints were experienced?
- How can the participatory process and methods be improved, if at all? Do some stakeholders need capacity building or more opportunity to take part? Are some too dominant and need to be managed so that others can join in?

3. Awareness, information development, information dissemination and communication

In terms of content, what exists and gaps in awareness and capacity have been identified for every component in this R-PP? This section provides some brief insights into how the awareness raising and capacity building will be conducted during the R-PP implementation phase.

Topics will always be based on identified need. For example, during the visioning exercise in the R-PP launch workshop, out of the 60 visions drawn by participants of what good REDD implementation is, only 3 visions incorporated sustainable utilisation of the forest. This awareness and capacity gap will clearly and urgently have to be tackled.

The importance of awareness-raising on REDD cannot be overemphasized. Awareness raising can involve participatory mechanisms (see participatory toolbox in Annex 1b-2 II), research dissemination, advocacy, networking initiatives, mass media, etc.

Adequate resources will be built into the heart of the REDD strategy development process, not added on as an afterthought, and will be laid out in a communication strategy. The strategy will outline the objectives, level of awareness and knowledge of stakeholders (the audiences), communication channels to reach stakeholders, communication channels to receive comments, and critical success factors to make REDD work.

Design phase

The following minimum tasks are required during the design phase of REDD awareness raising:

- Be clear about who the different stakeholder groups are, so that different communications can be tailored to each audience.
- Identify the combinations of personal and/or non-personal communication channels that can most effectively be used to convey messages to the different stakeholders.
- Establish performance standards to measure the success of the awareness campaign promoted through these channels.
- Describe the necessary administrative and logistic requirements to manage and coordinate the awareness-raising.
- Cost the options available for communication channels, and recommend optimum arrangements for the different stakeholder groups.

The output from this activity will be a REDD awareness raising-strategy outlining objectives, communication channels to reach and receive comments from stakeholders and the critical success factors of the awareness raising strategy.

Awareness raising media

Approaches developed for the R-PP implementation phase in Ethiopia will include the following range:

- **Personal Meetings, Conferences, Seminars**. Face-to-face communications will be important, especially for the more immediate and easy-to-reach stakeholders.
- **Paid Advertising**. Radio and newspaper advertising will be considered though when it would be appropriate, for example in launching new initiatives and in taking messages out to wider audiences.
- **Free Media**. Promotion through the 'free' or news media should be undertaken with the frequent release of news stories aimed at both local and national news outlets. This will provide a steady drip of information that will maintain the profile of the campaign and demonstrate movement. Relationships with journalists and editors will be built-up and media briefings laid-on to help provide more informed understanding of the issues.
- **Publications**. Attractive, easy-to-read documents which explain REDD, aims, objectives, will be produced quickly. These will also play an important part in helping to gain partner support. The language and terminology used in these, as in other publicity materials, will be as inclusive as possible since many audience groups will not aware of what REDD is.
- **Leaflets for the wider public.** At a later stage leaflets for the general public will be required, particularly where essential information, such as change in legislation needs to be communicated. Outlets for these could include Government offices.
- **Internet**. The Government will set up its first interactive website – The Ethiopian Forestry Forum – and use it as an experiment in citizen participation. This will help disseminate sector information within the country and also promote and raise the profile and understanding of the REDD itself. The site will be attractive and easy-to-use and must be regularly updated with new information. Discussion and consultation areas will broaden input and may help the building of mailing lists of interested parties.
- **Visual Identity**. A visual identity for the REDD strategy will be developed in Ethiopia through the use of a logo or logotype that is adaptable to a wide range of media.
- **Briefing Notes**. A system of background and issue-specific briefing notes on REDD and its various components will be introduced to help deal with requests for information.

These should be regularly updated and used as required. They should also be made available on the internet site.

- **Outreach**. While radio will extend communications to a large audience there are still areas which will need to be reached with more specialised means of communications such as conducting REDD 'roadshows' – with questions and answers. Also other methods such as conducting role plays highlighting the complexity of REDD/lowering expectations where they are high etc. may be suitable in some contexts. Where possible these should be piggy-backed with other initiatives/events.
- **Education**. The education system should also be used to enrol children as communicators, translators and influencers. Opportunities to use the forest as a setting for education and public participation should also be developed.
- **Interactive DVD**. An interactive REDD DVD will be prepared which will be a user friendly guide to the REDD strategy development phase harnessing all international best practice

Managing stakeholder information and inputs – communication strategies:

A system will be defined to manage information about its stakeholders, and for receiving, and responding to, their inputs. Appropriate information systems help to organize the collection, storage and dissemination of information and may include internal administrative systems, letters and meetings. The following will be developed:

- a detailed information base on all stakeholders involved in the process is regularly maintained;
- relevant information reaches stakeholders in time – i.e. in good time before consultations so that they are well prepared and promptly after consultations so the information can be verified;
- all issues and concerns of stakeholders are captured and directed to the relevant authorities, and issues are addressed in time;

The response system will be in the form of a stakeholder database – a user-friendly information system designed to store all data from consultations in an accessible manner. The database system should allow the rapid and efficient recording and classification of comments so that they can be processed and transformed into usable information. Once the stakeholder database has been developed, assigned persons on the Technical Working Groups will be responsible for administering it.

Disseminating lessons:

The sharing of lessons will involve:

- developing a brief dissemination strategy that identifies audiences, thematic areas for learning, appropriate products/media; the strategy should be flexible and concise – it will be a working tool, and closer to a two-page work plan than a 20-page rationale;
- identification of key lessons (messages), and who needs to hear them (audience);
- development of appropriate products, targeted to the audience;
- use and distribution of the products (including lobbying), which may involve developing partnerships to reach different audience levels, or facilitated workshops and briefing sessions.
- Products may be printed, radio, TV, seminars, lobbying events, press releases.

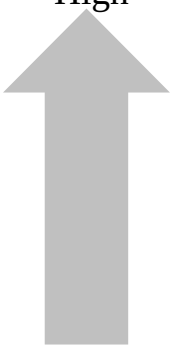
5. Consultations at various levels

The word 'participation' in fact covers a spectrum of *degrees* of involvement of people, and applying the right kind of participation to the right stakeholder (whilst considering practicalities like cost) is a key skill that the participatory REDD strategy development team must possess. At the lower end of the spectrum it may only be necessary to provide information to people who may not directly influence or be affected by forestry, whereas at

the other end of the spectrum, those directly affected by forestry would be targeted to be involved in decision-making. The following two tables highlight the spectrum of participation and the implications for the participatory REDD strategy development team.

Table 45 Summary of spectrum of participation

High



Low

Degree of participation	Role of the practitioner
Shared decision-making and action	Facilitates stakeholder analysis and negotiation: e.g. using methods from the toolbox in these Annexes
Consulting	Extracts information: e.g. through questionnaires
Informing	Disseminates: e.g. through leaflets and presentations

Table 46 spectrum of participation and implications on those responsible for steering the REDD strategy development process

	Informing	Consulting	Shared decision making and action
Typical process	Presentation and promotion	Communication and feedback	Consensus and partnership building
REDD strategy development team	"This is what we are going to do"	"These are our options. What do you think?"	"We want to develop options and do actions together"
Advantages	One-way communication usually more straightforward than two-way	Chance of improving decisions, plans and policies	Harnessing ideas in decision, plan and policy making and implementation, increasing breadth of stakeholders' ownership of outcomes.
Disadvantages	Are we missing some useful feedback from these people?	Maybe these people will feel they should have been involved earlier or have other options beyond those presented?	Is the process for decision making and action clear and fair for all types of stakeholders taking part? Do stakeholders trust each other? Are some actors pushing their ideas too much? Is the number of people

	Informing	Consulting	Shared decision making and action
			involved manageable with the resources and time available?
Preconditions	Identified audience Information presented clearly in appropriate format.	Ability to synthesize and incorporate responses.	Expertise in facilitating a multi-stakeholder process is needed.

The degree of participation may change at different times in the REDD strategy development and implementation process. What is most appropriate at one point when broad discussions are needed and time is not an issue, may not be the most appropriate at another point, when hard decisions have to be made quickly – for example right before a policy is to be put into law. Also resource or procedural constraints may mean that participation will have to be appropriately tailored to maximise efficiency. Also, what is right in one cultural context may not be right in another. It is always best to experiment first before assessing appropriateness, rather than making assumptions before testing.

6. Strengthening community based organisations

Once marginalized stakeholders have been identified through the stakeholder mapping and analysis method, it is important to consider how they can be strengthened to improve their ability to participate on a level playing field of communication with more powerful stakeholders. Strengthening the marginalized enables them to be better-prepared to take full part in an REDD strategy development process.

Strengthening the marginalized can be done in the following ways.

- **Trainings** may be appropriate to build the skills and confidence of marginalized stakeholders. Trainings in presentation skills, position statement writing, negotiating and debating skills have all been found to be useful.

- **Rehearsal** of the methods and process used in multi-stakeholder meetings with the marginalized, allowing them to practice and build confidence in presenting their views. This should include an opportunity for them to review and where necessary revise the methodology that they feel is not appropriate for them. This practice (sometimes called a 'dry run') has made a huge difference to the ability of marginalized groups to participate meaningfully. It is best conducted in the days leading up to multi-stakeholder meetings, ideally in the same location as the meeting will be held so that they can feel comfortable with the place and materials/equipment to be used.

- **Access to information** by providing marginalized stakeholders with all relevant information before meetings so that they can prepare well.

- **Financial support will be provided** for the marginalized groups if necessary. They may have all the skills to take part but may lack the financial means to actually make it to regional or national fora.

- **Ensuring adequate feedback** to the marginalized groups that have been involved in meetings. Feedback is an essential, but often neglected, step in engaging and respecting stakeholders; informing stakeholders about the influence of their recommendations on national processes indicates that the team is serious about the importance of their

contributions; it helps to build trust and ownership in the REDD strategy and ensures that the REDD Technical Working Groups are not perceived as simply an extractor of information

7. Feedback loop – linking outcomes from consultation with high level decision making/policy making

An often overlooked aspect which might be even more important that strengthening the marginalised in step 6 is reorienting the powerful so that they will be receptive to the voices of the marginalised.

The more powerful stakeholders often need more focus than the marginalized in terms of strengthening attitudes, skills and methods in participatory approaches so that they are prepared and equipped to provide real space and opportunity to the marginalised stakeholders. This needs adequate attention and can be done through:

- **Training** may be appropriate to enlighten more powerful stakeholders as to the rationale for participatory approaches and how to use them. This is often effectively achieved through hands-on practice of the tools, including using role-play exercises where both more powerful and less powerful stakeholder roles are played.
- **Field programme** to meet the marginalized and to listen to their views(ideally through the use of participatory approaches) and experience their realities has often proven to be an effective way to engender more respect among powerful stakeholders for more marginalized stakeholders and for the positions these stakeholders take.

8. Participatory monitoring and evaluation (Continuous process)

Monitoring and Evaluation is an essential mechanism to learn from experience and to continuously improve on-going participatory processes. However, the practice shows, especially when resources are scarce, that M&E tends to be neglected because of their longer-term benefit. Thus, it requires a clear understanding of the expected benefit of implementing an adequate M&E system to obtain the required resources.

Annex 1b-3: Supplementary information for consultation and participation methods

(Note: The tools and methods of this chapter are adapted from O'Hara, 2009.)

1. Introduction

In order of priority in consultation facilitation– first the need for the appropriate attitude and behaviour, secondly the need for appropriate skills and thirdly to be acquainted with all the methods and how to select and adapt which consultation method to which purpose. Facilitators should be careful not to dominate, to listen carefully and not to be arrogant, but they also need a degree of confidence and courage to push the methods and process forward. Most importantly, they must be open-minded, and should not enter a meeting with rigid preconceptions about what the result of a discussion or exercise will be. The facilitator should focus on applying the appropriate process and tools, and should not seek to influence the content and outcomes.

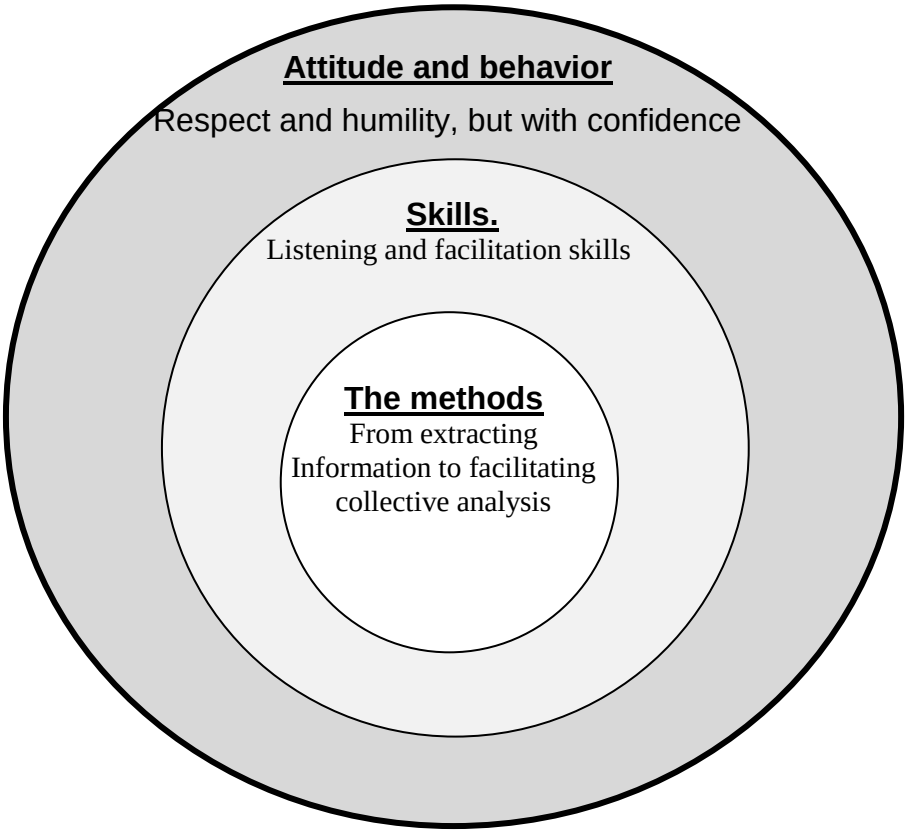


Figure 31. Linkage of attitude, behaviors and skills

Appropriate Attitude, behaviour and skills in consultation facilitation are fundamental to the correct application of methods.

2. Consultation methods

The consultation methods described in this section can and have been used effectively with all stakeholders, from government directors with PhDs to illiterate villagers. They can and have been used in formal meetings, workshops and conferences, as well as informally in offices, village halls, restaurants and under a tree in the village.

It is recommended that facilitators practice the methods with their colleagues before using them in real situations. This allows them to learn by doing and provides an opportunity for thinking through practicalities and identifying the necessary materials. Sessions can be stalled because something as simple as providing enough markers, cards or masking tape has been overlooked (see checklist of materials needed at the end of this section). It is important to plan for every conceivable eventuality. For example, fewer or more people than expected may turn up for a meeting, or the characteristics of the venue may limit the logistics possibilities – tables, boards or wall and floor space may be lacking. The more practice a facilitator has with the methods, the more she/he will be able to cope with the unexpected.

It is important to explain the purpose of the tool and *why* it will be used before describing *how* it will proceed. When explaining how to apply a tool, ensure that the procedure is simple and the guidelines are clear. It is useful to write the tool's purpose and the steps for applying it on a large sheet of paper to make it very clear to the participants. This also makes it easier for latecomers to the meeting to join in. Visualizations are a useful way of conveying the steps in a tool.

For a facilitator, the most difficult part of facilitating an exercise with a group of participants is starting it off, when courage and perseverance are needed. After this, as long as the method is suitable and the instructions are clear, the facilitator should step back and let the participants take the lead, to avoid the risk of facilitator influencing the outcome.

The facilitator should take care that the method selected from the toolbox is suitable for the purpose and context. This requires an understanding of the participants' cultural context and consideration of power and gender issues. For example, in some cultures it is best to separate men and women, so that women feel freer to take part in discussions. The presence of powerful people can also inhibit other participants; for example, villagers may be reluctant to speak openly in front of a local official or may not be completely frank in what they do say or write. It may help to assign someone to interview the powerful person separately, away from the main group.

Facilitators should also be careful not to raise unrealistic expectations among the participants. For example, if facilitators arrive in fancy cars or talk about money coming from REDD, participants may adapt their responses and present positions based on the material support they hope to gain, rather than on their real opinions or deeper interests. It is also advisable to avoid the word "need" when conducting participatory exercises, as use of this word often leads to 'shopping lists' from participants.

The best way of resolving some of these issues related to false expectations may be to spend time with participants levelling their expectations on REDD and building their trust before moving on to the tools. Or even better do not mention REDD at all – explain that you are doing a study on forestry issues.

Effective stakeholder representation is key to validity of the consultation work. Most affected stakeholders must continually be sought out by the facilitator even if there is resistance to this because, for example, those forest stakeholders are in an inconvenient place, are a marginalized group or are considered to be doing illegal activities. Spatial sampling methods help ensure that the sample of people met is representative. Another option is the

categorization of stakeholders not only into how affected they are by the forest and forestry decisions, but also according to their socio-economic status, age, gender, etc.

Often the physical context will have to be considered when facilitating a method. Some methods, such as 3Rs ranking are best done on flat ground or a large table where it is easy to place counters/corns. Others, such as problem or SWOT analysis, are often best done on a wall so that people can see the outputs clearly.

Sessions with a visual output should be ended by asking volunteers from participants to present the results of the exercise. This helps ensure that the analysis is generated by the participants, and promotes a sense of ownership over the findings.

The methods in the following toolbox can be used in many different ways. Even when only one way is described, it does not mean that this is the only possible way of using the method. All methods have strengths and weaknesses – none are perfect – and some may not be appropriate for the consultation purpose or the particular context. It is strongly recommended to use several complementary methods for the same purpose. This provides a range of different "lenses" for examining issues and helps verify the results in a process known as "triangulation".

Materials from exercises should be left behind in the community, but notes should be taken by facilitators as a record. During all of the consultations, you must play the role of facilitator with community members in the driving seat.

The following methods and tools are adapted from FAO/O'Hara, 2009.

Tool 1. Stakeholder mapping and analysis

A preliminary stakeholder mapping and analysis was tested during the launch workshop. The method seemed to work quite well (method described in following diagram). This method will be repeated at federal, regional and woreda (district) levels to ensure all appropriate stakeholders are identified and categorized correctly so that appropriate consultation and participation strategies and methods are applied. The steps of the method are self explanatory in the following figure.

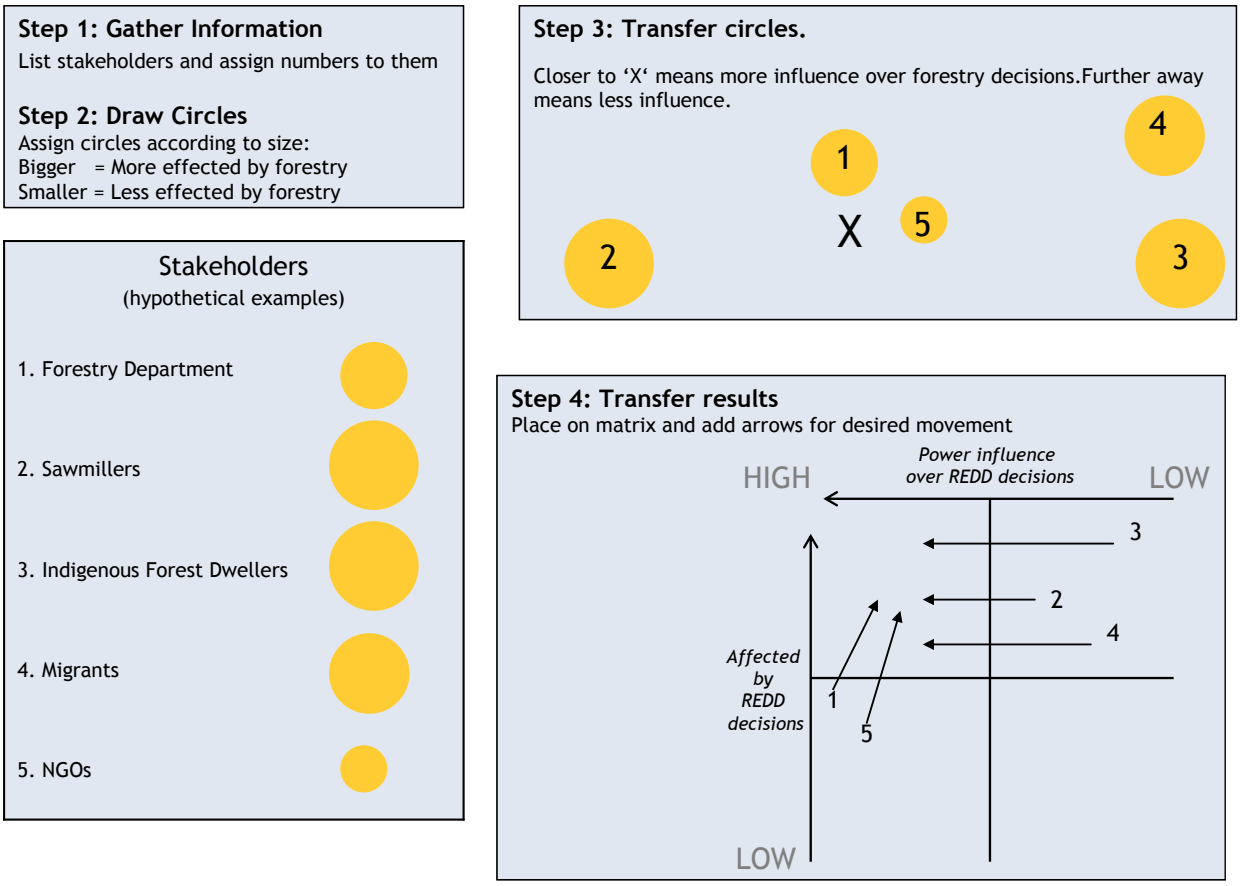


Figure 32 Stakeholder analysis exercise with hypothetical contents

Tool 2. Visioning

Purpose: Can be used to assess expectations for REDD or sustainable forest management and has also been useful as a step towards developing a forest management plan as goals and activities can be identified. Literate and non-literate stakeholders can take part.

Procedure

Step 1. Give each participant a sheet of A4 paper and marker pens. Ask them to draw what they think would be the ideal scenario for whatever the issue is, such as the vision of Sustainable Forest Management. Ask the participants to draw their own thoughts without words (or copying). Set a time limit (such as ten minutes), and assure them that the artistic merit of their pictures will not be assessed.

Step 2. When everyone has finished their pictures, ask each participant (or a few volunteers) to explain his/her picture to the group. Explanations should be limited to about a minute (use time cards) and participants should be able to respond to any request for clarification (questions should be restricted to this). The facilitator should accept all visions as valid points of view. The only word allowed on the pictures is the name of the artist, which is useful for future reference.

Comments and tips

It is useful for the facilitator to draw his/her vision while the participants are drawing theirs. In many cultures drawing is regarded as an activity for schoolchildren rather than adults, so having the facilitator join in helps remove any sense of teacher/pupil.

Tool 3. Time/trend line

Purpose: Good method to use early on in the process with community members to scan for issues and understand forest management in that community. Can be used to assess trends in forest cover/quality and probe to find causes of changes.

Procedure

Step 1. Attach a poster-size sheet of paper to the wall, with an X axis and a Y axis, as shown in the Figure, and label the axes.

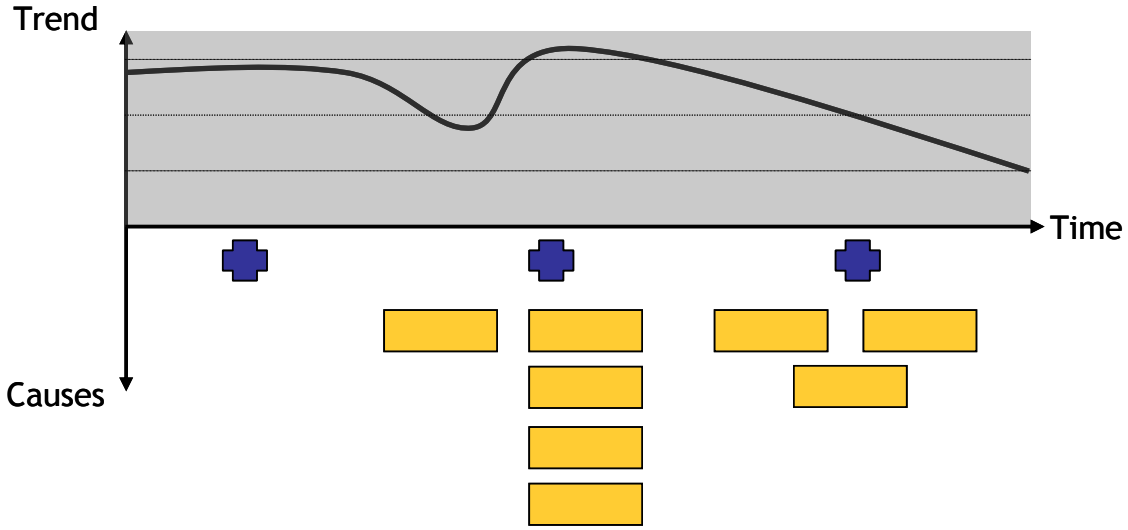


Figure 33Trend/time line

Step 2. Ask the participants for a well-known event that occurred a long time ago (preferably within living memory). Ask a participant to write/draw the event on the horizontal axis (shown by + on X axis), if possible with a date, although this need not be exact. Then ask for other significant events, and position these in the appropriate order along the x axis to indicate roughly when they occurred.

Step 3. The resulting frame can be used to explore trends related to, for example, motivation to invest in forest management. Ask the participants to nominate someone to draw the trend line (an elder may be the best choice) or as a prior step use counters to assess trends, people can be given 10 counters and the they can use the counters to assess motivation, 1 counters is low motivation, 5 average, 10 is very high etc. Then the trend can be based on this. If there are significant disagreements, different individuals can draw their own trend lines on the diagram, each labelled with the drawer's name and/or drawn in a different colour. General patterns may then emerge and an average trend line can be drawn.

Step 4. Where there is a dip or a peak in the trend line, ask the participants to write/draw the causes of this on cards and attach these below the central axis aligned to the dip or peak. The causes can then be discussed in more detail and form the basis for a subsequent tool, such as problem analysis (Tool 6).

Comments and tips

As only one person draws the trend line, it can be difficult to facilitate this exercise in a group setting where there are different ideas about trends. Hence innovating to use counters to assess trends might be a good option for larger groups.

Tool 4. Synthesis brainstorming on problems

Purpose: A simple, democratic and effective way for separate stakeholder groups to synthesize what they see as the key problems – can be a preparatory step for problem analysis but care must be taken that the frame for problem identification is within the framework of problems with forest management, otherwise a diverse array of non forest management related problems can emerge.

Procedure

Step 1. Give an equal number of cards and a marker to each participant. Explain that this is a democratic exercise, so limit the number of cards distributed; for example, a group of ten can have ten cards each, a group of 40 one card each.

Step 2. Ask participants to write one clear idea/statement per card about the problem being brainstormed.

Step 3. Attach the cards to the wall or a large board. Ask for clarification if the contents of a card are not clear.

Step 4. Ask the participants to group similar cards together, and summarize the main groupings on A4 paper.

Follow up. A brainstorming on strategies to address the problems can be done using the same steps.

Tool 5. Problem analysis

Purpose: A key tool to probe to the root drivers of forestry problems and enabling analysis of the inter-linkages among causes and among effects.

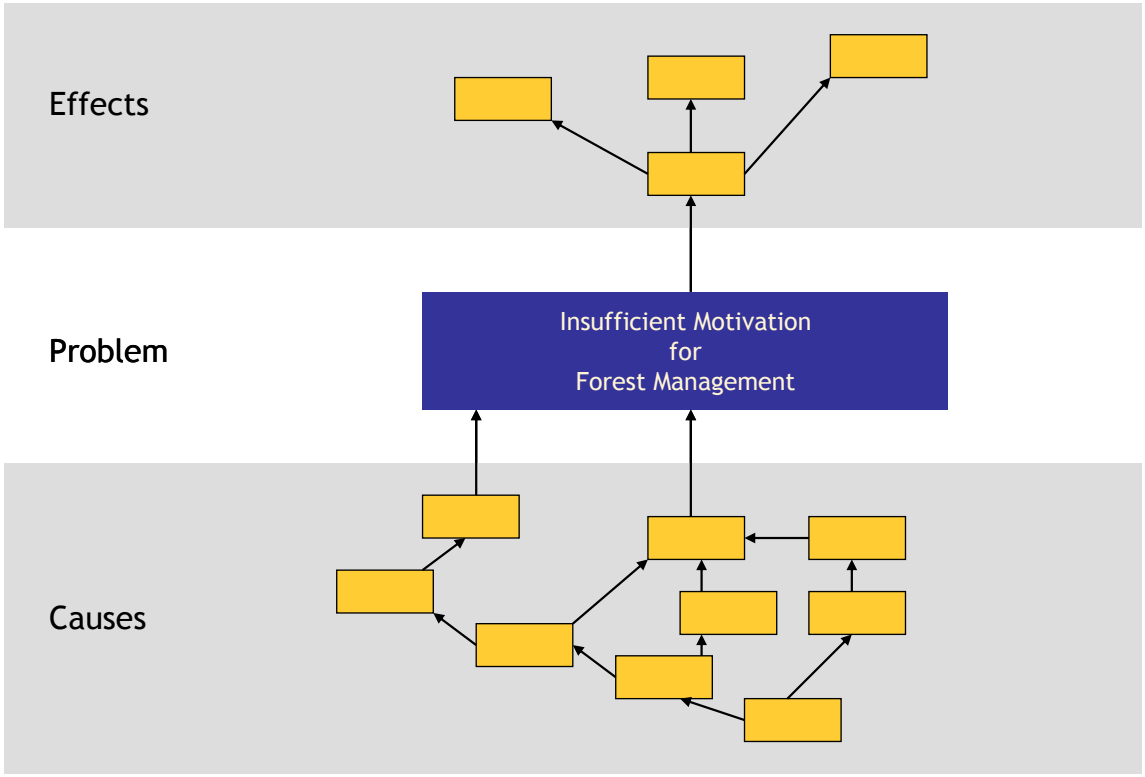


Figure 34. Basic structure of problem analysis

Previous steps: Before applying this method, it is often helpful to use other methods to identify the key problem or to understand the context, such as a time/trend Line (Tool 2).

Step 1. Find a suitable location. For large groups, it is probably best to develop the problem analysis on a wall, so that all participants can see. Ensure that there is enough space to attach the cards. Give out markers and cards to all the people present, including those who are only observing the meeting. Cover the wall with large sheets of paper, so that the finished exercise can be kept and moved.

Step 2. In the centre of the paper, place a large card with the problem stated and/or visualized. Remind the participants that the initial problem is tentative, and may be revised during the analysis. Down the left side of the paper write "Effects" above the problem, "Causes" below it, and "Core causes" at the bottom.

Step 3. Ask each participant to draw/write an immediate cause of the problem on a card. In this initial round, each participant should contribute only one cause. Attach these cards to the paper, with similar causes grouped together or overlapping.

Step 4. When the cards have been positioned, ask the participants to draw/write the causes of these causes on other cards (one cause per card) and group these on the paper. Follow this process until the group reaches what appear(s) to be the root cause(s) of the problem. The cards may have to be shuffled around as new causes emerge and participants debate which is

a cause of which. This means that the cards should be attached with masking tape, which can be stuck, unstuck and re-stuck several times.

Step 5. Once the participants have generally agreed about the causes and the positions of the cards, attach the cards more firmly to the chart.

Step 6. Ask for volunteers to draw arrows between the cards, linking the causes and the core causes to the problem.

Step 7. The same process is then repeated for the effects, with participants writing on cards and identifying and debating the effects of effects. The effects cards are then stuck firmly and volunteers draw arrows between them.

Step 8. Once the problem analysis is complete, ask for a volunteer or volunteers to recap, starting with the effects and working down through the problem to the causes and finally the core cause.

Step 9. As with other methods in this toolbox, the diagram generated in this exercise provides a focal point for discussion and debate, and/or a stepping stone to another method, such as solution analysis (Tool 5).

Comments and tips

This tool is sometimes called a "problem tree" with the problem being the trunk, the causes the roots, and the effects the branches. This method has proved very effective with large groups, in stimulating in-depth analysis of the causes and effects of a forestry problem, and the causes and effects of these. Many participants report that this is their favourite participatory tool, because it enables them to carry out their own analysis and present their own views, rather than providing information for analysis by someone else.

This method is a very effective when participants, particularly quiet ones, are continually encouraged to contribute by passing out cards to all present. It requires non-dominant facilitation once it has been started.

Participants can become over-concerned about defining the problem, which stalls the exercise before it has begun. To avoid this, emphasize that the problem is tentative and can be revised later. One of the causes that emerge may be reclassified as the key problem and become the focal point of the analysis.

Tool 6. Solution analysis

Purpose: Identifies strategy options for tackling the core causes of problems identified in the problem analysis

Procedure

Step 1. The problem analysis chart should be put on the wall and a volunteer asked to recap, starting from effects and working down through the problem to the causes and, finally, the core cause(s) of the problem.

Step 2. Ask the participants to write/draw on cards solutions or strategies for tackling any of the causes – one solution or strategy per card. Try to start as close to the core causes as possible. Place each strategy/solution card near to or over the cause card it relates to. Similar strategies/solutions should be grouped together.

Step 3. Once the solution cards have been positioned over the causes, start discussions about the impact of each solution on the cause cards above it, on the problem itself and on the effects. Ask the participants to write/draw the implications on cards and place these over the problem analysis cards.

Step 4. Ask a volunteer to review the solution analysis.

Comments and tips
During the solution analysis, the complexity of some problem should be kept in mind, and rushed solutions should be avoided. Leave any causes that cannot be solved, and revisit them later on.

Tool 7. Priority ranking

Purpose: Can be used in different ways, e.g. to rank the strategies options for sustainable forest management.

Two options are presented here – option A (which can be used with a group of up to 15 people) and option B (which might be more user-friendly for villagers and can be used for a much larger group)

Option A.

Procedure

Step 1. The priority ranking matrix (Figure 6) should be drawn on large sheets of paper and attached to the wall. The example is for a group of 5 individuals. The options should be written clearly (or drawn if on the matrix so that participants can keep them in mind.

Step 2. Individuals should rank options according to priority, thinking carefully and not being swayed by the views of others. If there are three options as in the example in the figure, the highest priority – should be assigned the number 3. The next number 2, and the considered lowest priority number 1. If there are been more options for example 5, then the numbers would be from 5 down to 1.

Step 3. Once the matrix is complete, the total score for each option is calculated, the highest score indicates the highest collective priority among the group, while the lowest score indicates the lowest ranked priority (See comments and tips box)

	Option 1	Option 2	Option 3
Name of individual			
Name of individual			

Name of individual			
Name of individual			
Name of Individual			
Totals			
Rank - Highest score is first, lowest score is last.			

Figure 35 Priority Ranking Matrix

Option B.

This option has exactly the same principles as the first option but a different means of conducting the ranking, using counters instead of numbers.

Procedure

Step 1. Lay out the pre-prepared exercise on the ground as shown in the following figure on the next page.

Step 2. Explain the purpose of the exercise first, emphasising that people should follow their own thoughts not be influenced by others.

1. Explain the procedure of the exercise and give out 10 pieces of corn to each person (for 4 options this is suitable i.e. 4 + 3 + 2 + 1 = 10. More options will accordingly require more counters to be given out).

2. Ask people to individually decide in their head which option should be first priority, which second, which third etc.

3. With 4 options first choice should get 4 pieces of corn/counters. Second choice should get 3 pieces, third should get 2 pieces, and fourth should get 1. Again ask people not to be swayed by what others put.

4. At one time everyone places the corns in the appropriate circle – totals are written beside each circle and the ranking I (for highest score), II, III and IV (for lowest score) written in the last column.

Describe options	People insert counters into circle. Write total beside circle	Rank (Highest total is 1st rank, lowest total is last rank)
Option 1.		
Option 2.		
Option 3.		
Option 4.		

Tool 8. Strengths, Weaknesses, Recommendations analysis

Purpose: Adaptation of the SWOT method that simplifies and avoids misunderstandings. Great tool for forest policy analysis – looking back at past policies (strengths and weaknesses) learning from them then looking forward to new developing improved policies.

	Strengths + ←	Weaknesses -	Practical recommendations + →
	Looking back		Looking forward
Topic to be analysed, e.g. forest policy			

Figure436 A SWR analysis chart

Step 1. Prepare a matrix with 3 columns large enough for the maximum number of cards per column Copy the wording and arrows from the figure.

Step 2. Give each participant cards and markers. It is useful to limit the number of cards per person for each column, to ensure that the exercise is not dominated by some participants. As a rule of thumb, four cards per person per column is a good maximum number for a group of five people, and one or two cards per person per column for a group of 30. As with all other participatory methods using cards, ask the participants to write clearly and in large letters with only one idea per card, as cards will be grouped.

Step 3. Ask the participants to start by writing strengths before moving on to weaknesses. Then ask them to help group similar strengths and weaknesses in these first two columns. Ask a volunteer to summarize the main groups.

Step 4. Ask the participants to reflect on the cards/groupings in the strengths and weaknesses columns and think about future recommendation that may arise if strengths are built on and weaknesses tackled. They should write these recommendations on cards, which are then positioned in the recommendations column.

Tool 9. 3Rs ranking

Purpose: This method helps identify perceptions of community members on the 3 pillars in sustainable forest management for local people - rights, responsibilities and revenues (benefits). It can be used as a way to assess expectations from REDD, as a way to discuss the principles of sustainable forest management. **It is excellent for a SESA baseline.**

This method is an adaptation of the 3Rs method.

The 3Rs stand for the three fundamental pillars of local forest management-

1. **Rights** for community members over the forest area.
2. **Responsibilities** – investment in care- for sustainable forest management.
3. **Revenues** and benefits from the forest.

It can be used as a baseline before REDD implementation, and also to map expectations for REDD. It can also be used to monitor and evaluate the perceived incentives balance after REDD support comes.

Procedure

Step 1. Introduce the purpose of the method and the need for frankness and honesty during it.

Step 2. Introduce the matrix for the method (see below) place on the ground in a suitable location and clarify each category. Method can be done ideally in two stages before REDD is implemented and after REDD is implemented.

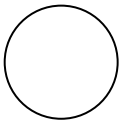
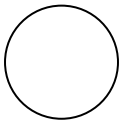
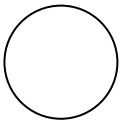
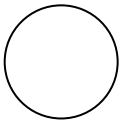
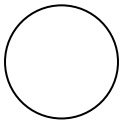
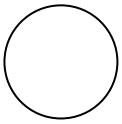
Before REDD: Level of user rights over the forest	Before REDD: Level of responsibility/care for the forest.	Before REDD: Revenues and benefits from forest.
		
After REDD implementation: Level user rights over the forest	**After REDD: Level of responsibility/care for the forest.**	**After REDD: Revenues and benefits from forest.**
		

Figure 37. 3r Matrix

Step 3. Ask for examples on cards for before REDD in one of the categories. Literate people can write on cards for the illiterate people or illiterate people can draw ideas using pictures.

- For the 1st column, user rights, they should list examples of forest user rights before REDD implementation and then after REDD implementation (this can be expectations)
- For the 2nd column on responsibility/care for the forest, list examples of responsibilities for forest care before REDD implementation and then after REDD implementation.
- For the 3rd column on revenue and benefits from the forest – list examples of household benefits before REDD implementation and after REDD implementation.

Place the cards in the appropriate column and row above the circles that are drawn.

Step 4. Ask each person to carefully consider the category and what is written on the cards before deciding the number of maize (or other counters) to place in the circle below the cards to represent the level they would like to indicate according to the following descriptions. Every individual places counters.

- For the first column, concerning user rights, 10 pieces of corn is feeling of full user rights, down to zero, no feeling of user rights/control.
- For the second column concerning level of protection activities for the forest, 10 is exceptional care to protect the forest, right down to zero being no care for the forest.
- For the third category concerning household income/benefits from the forest – they have to assess percentage of household income from products from that forest. 5 out of 10 is 50%, 1 out of 10 is 10% etc. Otherwise they show difference in total income by

placing 5 as the amount of income before REDD then calculating the percentage increase or decrease. 20% increase would be 6.

Step 5. Once the maize/counters are placed in that circle then divide by the total number of counters/maize distributed and multiply by 100 to convert to percentage. Write the percentage in the circle. Do the same for the after REDD row.

Step 6. Once all categories are complete work out the change in percentage, before and after REDD for each category – highlight change in red.

Step 7. Then discuss the changes, why they have happened for each category? Then discuss the balance between ' User rights', 'Protection/Care' and 'Income/Benefits' and ask what the relationship is between the three – before and after REDD implementation? Ask how they would like the balance to be in future between costs and benefits in REDD implementation?

Comments and tips

This method is not designed to measure exact amounts – for example, asking details about money. Instead it aims to make proportional comparisons.

Tool10. Poster presentations with post-its

Purpose: A useful open participatory method for reviewing documents.

Procedure:

Step 1. Put posters up some time before the session(e.g. one week before).

Step 2. Facilitator or participants can present the posters, one by one. No verbal questions are allowed at this point.

Step 3. After each presentation, participants can write on post-its(stickers) any clarification questions, comments etc. and stick directly on the part of the poster content the comment refers to.

Step 4. After all the presentations have been made, participants are given time to review the posters and add more comments, while presenters read and group the post-its on their posters, thinking about how to respond to the questions/comments.

Step 5. Starting with the first poster presented, the group then moves from poster to poster, allowing five minutes for each presenter to respond to the post-it comments and questions.

Step 6. Once all the responses have been made, if some points still need to be clarified or there are any misunderstandings, a few minutes can be allocated to verbal questions and responses.

Step 7. A good follow-on method to this is the SWR method (tool 10) to then to an summary analysis of the document.

Tool 11. Fishbowl debate

Purpose: It levels the communication playing field by containing dominant participants and providing opportunities for all to take part – good when there are power imbalances among participants. It also provides a platform for expressing grievances and constructive communication – ideal for large group discussions or in conflict management processes

Statements/presentations for the debate can be based on - or can be actually presenting the outputs – especially recommendations from other exercises – such as the SWR or problem analysis.

Step 1. Divide the participants into their separate stakeholder groups.

Step 2. Ask each group to develop two position statements (the number depends on the number of groups – ten position statements may take at least two hours to debate). These statements should contain a perceived problem with justification and recommendations to address that problem. These statements can be based on outputs from problem analysis (Tool 5), SWOT analysis (Tool 8) or synthesis brainstorming on problems and solutions (Tool 4). When developing their statements, the participants within each group should try to reach consensus or compromise. If this is not possible through discussion, a ranking exercise (Tool 7) can be conducted within the group. Provide sufficient time for this internal stakeholder group work.

Step 3. Presenters are selected who must prepare a justification for presentation they are about to make, citing evidence and experience in its support – this can be achieved by putting up outputs of supporting participatory exercises on the wall.

Step 4. The seating arrangements for a fishbowl debate are very useful in levelling the communication playing field. Prepare the fishbowl by arranging chairs in a large circle, with no tables in front of them. Ensure that there are enough chairs in this ring for all the participants, and avoid having extra chairs in the room, or a second row, to encourage participants to sit in the ring. Place four or five chairs facing each other in the centre of the ring (where the "fish" will sit). Position a flipchart or board so that it is easily visible to all the participants when seated, and attach the presentation. If available, a single microphone can be provided for the central chairs, to ensure that only one person speaks at a time. However, a microphone is not necessary for the exercise

Step 5. Ask the participants to sit on the chairs of the outside ring. Explain how the fishbowl debate method works by using a visual diagram with clearly written instructions and by having a demonstration. The main rule is that only those in the centre of the fishbowl – the "fish" – are allowed to speak. One chair in the centre is reserved for the justifier of a statement, and the others are for respondents.

Step 6. The first presenter presents the first presentation, before sitting on one of the central chairs for the remainder of the debate. The debate now begins, with participants who wish to respond to the justification moving from the outside ring to sit on any free chair in the centre. There can be as many respondents as there are chairs in the centre, and respondents make their comments in the order in which they arrived at the central chairs.

The presenter can respond after each comment if they so wish. The respondent must leave the central circle as soon as she/he has commented, or when time runs out(1 minute is best). He/she then returns to the outer ring and waits until at least one other respondent has spoken and there is a free chair in the centre before returning to the centre to make another comment. The debate can be ended by closing the fishbowl – which stops new people coming to the centre but those already there can finish what they have to say.

Step 7. The wrap-up can be done in various ways. One method is simply to ask participants to raise their hands to show their agreement or disagreement. Another method is to put labels with "Agree" and "Disagree" on opposite sides of the room and ask participants to stand under the label that represents their views as each presentation is reviewed. Participants who do not agree or disagree particularly strongly can stand at the appropriate point between the two labels. The debate can also be closed by asking participants whether they changed their minds during the debate, and why, but the facilitator must be careful that this does not reignite the debate.

Comments and tips

This method's strength lies in ensuring that the debate is not dominated by one or a few individuals, and in developing a momentum that allows the facilitator to step back and not influence the outcomes.

However, not everybody is comfortable coming into the middle of the fishbowl and verbally justifying or responding. This is why it is important not to rely on only one method in a multi-stakeholder meeting; some participants may be more comfortable with card-based methods.

Time management and enforcing the rules are extremely important in a fishbowl debate, especially during the first 15 minutes or so, while the rules are established and understood. All participants – whether directors or villagers – must be treated equally, for example, regarding the timing of their interventions. To help with this, the facilitator can prepare time cards marked "2 minutes", "1 minute", "30 seconds" and "Stop!!", and instruction cards marked "Quiet on the outer ring, please" and "Move to the outer ring, please".

Several tools follow on well from the fishbowl debate, such as a priority ranking exercise (Tool 8) to find the collective priority ranking related to recommendations raised during the debate.

Checklist of materials for facilitating consultation sessions

The following list represents the ideal scenario, but improvisation is encouraged. Facilitators should work creatively with what is available, and not use a lack of materials as an excuse for not using an otherwise appropriate tool.

However, whatever materials are being used, the facilitator should prepare them before the session. To check that all the materials are ready for the session, facilitators can run through a tool with their colleagues to see what they need before using the tool with stakeholders. It is advisable to bring extra supplies of materials to sessions. The following are materials that are often used in consultation meetings:

- Flipcharts or large sheets of paper: at least 100 sheets.
- Marker pens of different colours (suitable for flipcharts): 50 (some will run out).
- Ball point pens for poster with post-it exercise.
- A4 paper: one pack (for visioning, etc. and for making cards if necessary).
- Coloured cards: approximately 600. If these are not available, they can be cut from A4 paper, with each sheet cut lengthwise producing two cards – use a paper cutter if available. Cards that are smaller than this are difficult to write on with a marker pen in letters large enough to see at a distance.
- Post-its (stickers): six packs.
- Masking tape: eight rolls (ideally up to about 2.5 cm wide). Clear tape should be avoided as it is more difficult to remove and re-stick than masking tape. Used to stick cards to posters or walls.
- Scissors: two pairs.
- Note pads for documenters.
- Time cards – large cards or sheets of A4 paper, preferably of different colours, with timing and other messages written on them. These are a discreet way of keeping time in participatory meetings, with a volunteer participant showing cards with such messages as "10 minutes", "5 minutes", "2 minutes", "1 minute" and "STOP!". For the fishbowl debate adds cards such as "Quiet on the outer ring, please" and "Move to the outer ring please".

Annex 1b- 2 III Example of a consultation and sample outcomes – the first national consultation workshop on the 29th and 30th of April in Addis Ababa

The launch workshop as well as introducing REDD+, the R-PP and levelling expectations on the process, it was also used as an opportunity to conduct preliminary consultations on topics pertinent to the R-PP as well as to test and showcase various participatory methods that could be subsequently used in the process. The methods used and key outcomes are listed in the following table. These outcomes were arrived at in democratic ways using various participatory exercises. The detailed outcomes have been incorporated into this R-PP.

It must be noted that forest dependent stakeholders were not represented in the workshop – so the following results are not presented as conclusive findings, rather only as views of a group of professionals. How to reach the views of forest dependent stakeholders are laid out in this consultation and participation plan.

Table 47. Overview of participatory methods

Participatory method used in launch workshop	Summary, generalized outcomes
Presentation of purpose of R-PP and clarification on expectations.	• Key questions regarded various explanations on terminologies including difference between REDD and REDD+. • Some clarifications on what part of the process we were at, some thinking R-PP development led directly into REDD implementation. • Also it was asked what the link was between the UN REDD and World Bank FCPF programme.
Visioning exercise – what is good	This involved everyone drawing their own vision of that they envisaged good REDD implementation to be. General observations on the visions:

Participatory method used in launch workshop	Summary, generalized outcomes
REDD implementation?	• High expectations that REDD will solve problems of deforestation through addressing poverty alleviation and massive support for forest protection and plantations. • Very few views presented REDD as a means to support sustainable forest management and use by local stakeholders(i.e. REDD +)
Problem analysis of causes of deforestation and degradation	• **Perceived immediate causes/drivers** of deforestation and degradation were identified, these included that agriculture is more attractive than forestry leading to high pressure for conversion/deforestation and degradation due to grazing. Other causes included unsustainable consumption of forest products such as fuel wood, high internal migration to forested areas and forest fires. • **Perceived underlying causes/drivers** were identified as lack of emphasis on forest management in the country, insufficient participatory land use planning and perceived disconnect between local needs and national priorities. Lack of a strong forest management dedicated authority/institution was linked to this underlying cause as was a general lack of awareness/profile of forest management at all levels. • **Recommendations** during the REDD strategy development phase to deal with the drivers of deforestation included strengthening/enhancing forest policies that support forestry management, strengthening developing forestry institutions, enhancing participatory land use planning and developing a series of experimental pilots in a 'Participatory Action Research' mode either around new topics or around existing promising strategies such as Participatory Forest Management. Tentative pilot ideas are elaborated in 2b of the R-PP
Modified SWOT (SW, Recommendations and Risks) analysis of existing and past projects programmes and policies aimed at reducing deforestation and degradation	**Key Strengths:** • Moves towards devolution of control of forests to communities through Participatory Forest Management have had good effects on deforestation and degradation. • There have been various conservation and forestry related policies and plans drawn up over the last few years. **Weaknesses.** • Insufficient implementation of existing policies related to forestry. • Lack of a forestry institution in the country to implement the policies and manage the forest sector. • Current policies have some weaknesses in them notably around the issue of perceived lack of clarity of user rights over the forest and seemingly conflicting agricultural and forest management related strategies.

Participatory method used in launch workshop	Summary, generalized outcomes
	Recommendations for REDD strategy development The recommendations in order of popularity focussed on: • Ensuring that forest affected community members have a say in how the REDD strategy is developed. • Strengthening/developing an institution responsible for forestry which is adapted to be able to manage REDD implementation. • Developing regulations and supporting the implementation of existing forest policies. • Revising the existing policies that impact on forestry to strengthen local user rights and focus on enhancing benefits from the forest to local people. • Rather than start new projects, build REDD support onto existing successful strategies such as Participatory Forest Management. **Risks to REDD implementation.** • Insufficient benefits going to forest communities, imbalance between burdens and benefits. • Population growth, food insecurity, etc. creating pressures on forest that REDD incentives can not halt. • Raising too high expectations that are not met will lead to disillusionment among affected stakeholders.
Stakeholder identification and analysis	In this preliminary stakeholder analysis 16 different categories of stakeholders were identified. Stakeholders were defined as groups/types of people either affected by or influential on forestry decisions. The stakeholder groups were mapped out in terms of their current affectedness/accountability and power/influence over forestry decisions and shifts were identified that were required to make forestry decision making more democratic during the REDD strategy development phase. Full results are contained in the Annex of this component. • The most notable recommended power shifts during the REDD strategy development phase included providing more access to decision making for forest communities and forest fringe communities and also private sector forest industries/enterprises (large and small, formal and informal). • The Ministry of Agriculture and Rural Development(MoARD), Environmental Protection Authority(EPA) and the government bodies responsible for culture/tourism and wildlife were pointed out as organisations that could enhance participation in decision making during the REDD strategy development phase and thus become more accountable. The suggested mechanisms to enhance participation during the REDD strategy development phase included the following: • Raise awareness on the rationale, principles and mechanisms for participation – both at high and low levels.

Participatory method used in launch workshop	Summary, generalized outcomes
	• Capacity building on participation, rationale, skills and methods – both at high and low levels. • Strengthen/build community level institutions so that they can have a stronger voice in decision making by the time REDD implementation occurs. • Set up multi-stakeholder forestry forums at Federal, Regional and Woreda (district) levels. • Enhance/Establish a more representative multi-stakeholder steering committee for REDD strategy development and implementation at national level. • Cross cutting – ensure appropriate gender balance at every level.
Debate on recommended actions for REDD strategy development	A debating method was used that enabled everyone equal access to participate and ensured that there was no domination. Champions for key recommendations that emerged from the previous sessions volunteered to justify their statement which was then responded to. Prominent debating points around recommendations for the REDD strategy development phase included • **On enhancing stakeholder participation**, this included unpacking the term 'participation' and ensuring that what happens is meaningful engagement of forest dependent stakeholders in decision making and getting consent, not only consultation. • **On forestry institutional strengthening,** it was strongly debated that the Ministry of Agriculture and Rural Development might not be the best base for government foresters and that a stand alone forest institution is required to manage REDD implementation. • **On awareness raising and capacity building,** it was debated that simple user friendly materials are needed to explain REDD and lower currently high expectations. Also important to target materials to the audience. With capacity building it was suggested to link capacity building with 'action research' so that there is learning-by-doing and so that trainings are linked to local realities. • **On piloting,** there was a lot of discussion on the best way to develop pilots. It was concluded that initial steps should be learning first from existing national and international experiences, avoiding mistakes and 're-inventing the wheel' and building learning into existing initiatives rather than only starting from scratch with new ones. • **On whether there should be an emphasis on policy implementation of existing policies or revision of the policies** there was not agreement. Some felt that the REDD strategy development phase was an opportunity to encourage the revision of policies to better support sustainable forest management, Participatory Forest Management and benefit sharing, whereas others felt that there was now an opportunity through REDD financial support to apply on the ground the many policies that are already on the shelf.
Brainstorming,	The key priority actions for the REDD strategy development were developed

Participatory method used in launch workshop	Summary, generalized outcomes
priority ranking of strategies	through a collective ranking method with all workshop participants involved. These were, in the following order of priority: 1. **Capacity building and awareness** raising on all the facets of REDD and also on forest management, drivers of deforestation etc. – catered to different levels from high level decision makers to forest dependent communities. 2. **Strengthening/developing forestry management and REDD related institutions** related to forest management and policy implementation as well as all the multi-stakeholder institutional requirements of REDD implementation, benefit distribution, auditing, monitoring and evaluation etc. 3. **Enhance stakeholder participation - cross cutting strategy** in forestry and REDD decision making through various mechanisms, participatory strategies, forums and committees. 4. **Pilot project support** providing action research support to existing REDD pilots and build pilots on existing initiatives that address deforestation and degradation effectively e.g. Participatory Forest Management. Carefully decide in logical process identification of new pilots that avoid 'reinventing the wheel'. 5. **Participatory policy revision** facilitate the review and revision of any policies that may be an impediment to REDD implementation in the next few years (e.g. with regards to clarifying forest user rights) and make amendments/additions necessary for REDD (e.g. related to benefit sharing mechanisms). 6. **Support the implementation of existing policies** during REDD strategy development phase before REDD implementation.
Action planning	Detailed action plans were developed by teams of participants around the previous recommendations as well as group work around carbon reference scenario development and the development of the measure, report and verify (M,R,V) system. Details of all of these plans have been incorporated into this R-PP – especially in the action plan sections.

Annex 2a-1: Ethiopia Administration

Level 1: Federal Democratic Republic of Ethiopia

Level 2: Kililoch

Ethiopia is divided into 9 administrative regions called kililoch (singular – kilil) or Regional States. The nine regions are:

- Afar
- Amhara
- Benishangul-Gumuz
- Gambela
- Harari
- Oromia
- Somali
- Southern Nations, Nationalities, and Peoples Region (SNNP)
- Tigray

The regional divisions have substituted the thirteen former provinces, to which still is being referred when describing locations. As described in a previous post, the government has decentralized the implementation of land management to the Regional States in 1997.

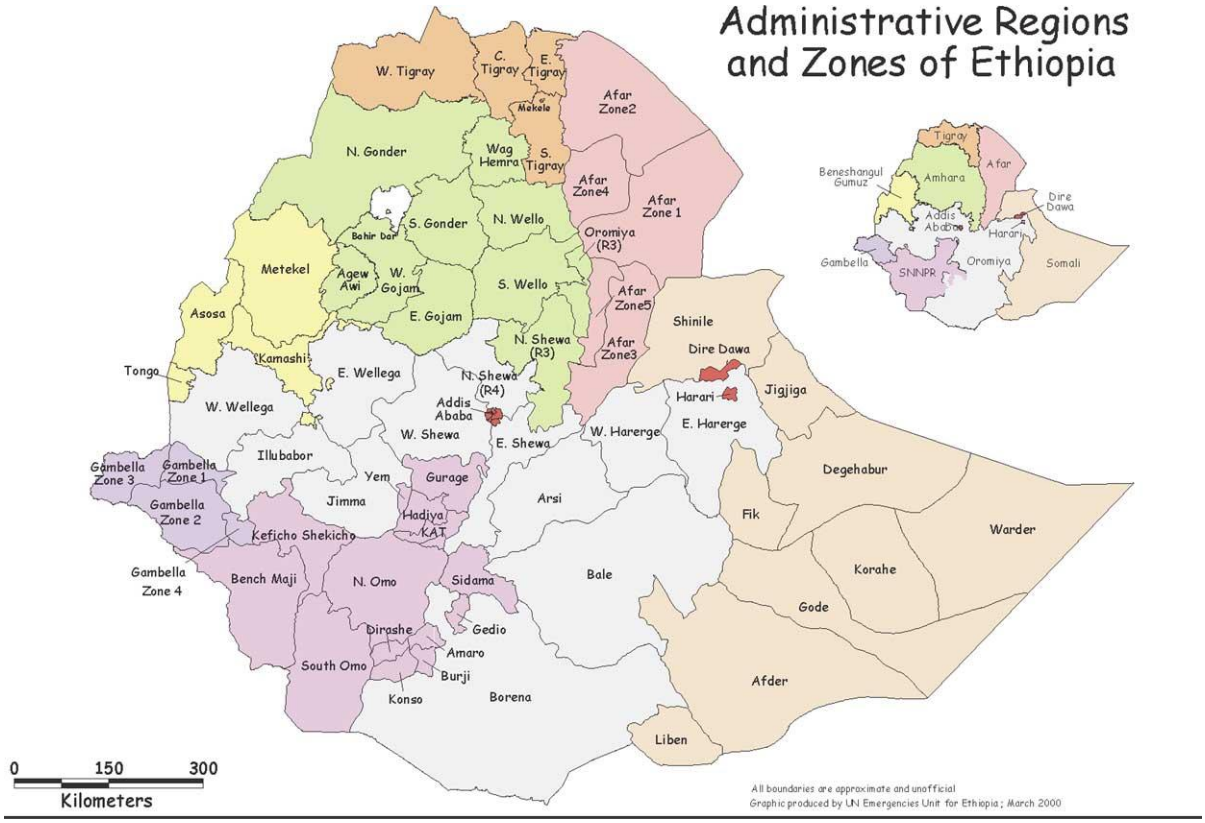


Figure 38. Administrative Regions and Zones of Ethiopia Source: Wikipedia, April 2010

Level 2: Chartered cities

A charter city may have some exemptions from national or regional laws. Because of these possible law exceptions, the two chartered cities of Ethiopia belong to the first level of

administrative divisions of Ethiopia, together with the kililoch described above. The two chartered cities of Ethiopia are:

- Addis Ababa (Ethiopia's capital city)
- Dire Dawa

A charter gives a city's residents the flexibility to choose any kind of government structure allowed by law.

Level 3: Zone

The kililoch are subdivided in 68 zones.

Level 4: Woreda

A woreda is equivalent to a district, managed by a local government. The zones of Ethiopia are subdivided in around 550 woredas.

Figure 39. Woreda levels Ethiopia Source: Wikipedia, April 2010 Level 5: Kebele

The woredas are composed of a number of kebele, the smallest unit of local government. Kebeles can best be regarded as a neighbourhood, a localized and delimited group of people or ward. Most of the efforts on land registration are made on this level, which happens to be the key to success, as I mentioned in my previous post.

Annex 2a-2: Forest resources and cover change in Ethiopia

The following table gives an overview of the national classification of forest and its definition. Where international defintions exist these are mentioned. In addition vegetation types according to a classification published be Lemenih et al. (2010) are assigned to the classes in order to contextualize REDD+ relevant land cover classes in the national ecological context.

Table 48 National and international definitions for forest classification and assessment

National class	Definition	Matching to vegetation types
Forest	Land with relatively continuous cover of trees, which are evergreen or semi-deciduous, only being leafless for a short period, and then not simultaneously for all species. The canopy should preferably have more than one story. This devinition is highly similar to the international definition according to FAO (FAO, 2010).	Can be found in the Ethiopian vegetation types (definition according to Lemenih et al. 2010)(1) dry evergreen Afromontane vegetation, (2) Combretum–Terminalia (broad-leaved) deciduous woodland,(3) Acacia–Commiphora (small-leaved) deciduous woodland, (4) lowland dry forests, (8) moist evergreen montane forest
High woodland	Combretum-Terminalia wood land with trees >5 m and crown tree cover >20%.It is found in East and West Wellega, Jima & Illubabor zone of Oromia region, in zone 2 of Gambella Region, all of Benshangule-Gumuz Region, and west Gojam, Awi and north Gonder zone of Amhara region. In other areas, it is woodland lying above 1250m above sea level. This class does not include shrubs and bushes. Equals FAO defintion (FAO, 2010).	Can be found replacing or within the Ethiopian vegetation types mentioned under forest (definition according to Lemenih et al. 2010).
Low woodland	All other woodlands and shrublands <5m in height and with crown cover >20%	Can be found in the Ethiopian vegetation types (definition according to Lemenih et al. 2010)(1) Dry evergreen montane forest, (2) Combretum–Terminalia (broad-leaved) deciduous woodland, (3) Acacia-Commiphora (small-leaved)

National class	Definition	Matching to vegetation types
		deciduous woodland, (8) moist evergreen montane forest.
Plantation	Mainly Eucalyptus, Cupressus and Pinus plantation with >5 m and crown density >20%	

The FAO's forestry department publishes forest resource assessment using an international land cover classification. These assessments are relevant for the international comparisons of forest cover development. The following table describes FAO international classification and definitions. Where these definitions have been matched to national classes during the FAO froest resource assessment 2010 (FAO, 2010) the match is provided.

FAO class	Definition	Matching to national class
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.	Forest, High woodland, Plantation
Other wooded land	Land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds in situ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.	Low woodland, Shrub land (not a national forest class, derived from WBISPP, 2004 land cover classes and included in the FAO FRA 2010)
Other land with tree cover (Subordinated to "Other land")	Land classified as "Other land", spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.	Not specified in Ethiopia

The following tables provide an overview on selected forest inventories for Ethiopia, which appear most suitable to provide background information on deforestation and forest degradation in Ethiopia. The heterogeneity of this data, the lack of consistent data and the necessity to establish standardized forest monitoring data is addressed in Component 3 and 4 of this R-PP.

Table 49 Forest resource statistics 1994-2005 in chronological order (Lemenih and Tadesse 2010)

	EFAP, 1994		Reusing, 1998	FAO, 2001	WBISPP, 2004	FAO, 2005	
Forest Resource	**Area (million ha)**	**Growth stock (m^3/ha)**	**Area (million ha)**	**Area (million ha)**	**Area (million ha)**	**Area (million ha)**	**Stock (m^3/ha)**
Natural High Forest	2.3		5.755	4.506	4.072	12.509	22
Slightly Disturbed	0.7	90-120	1.680	0.235		-	
Highly Disturbed	1.6	30-100	4.075	4.271		12.509	22
Woodlands	5.0	10-50	31.554*		29.24	44.650	2.3
Bush lands	20.0	5-30			26.40		
Plantations**	0.2		0.216		0.216	0.419	22
Farm Forests	NA	NA	NA		NA	NA	NA
Relative reliability ranking of the sources	3		4	2	1	4	

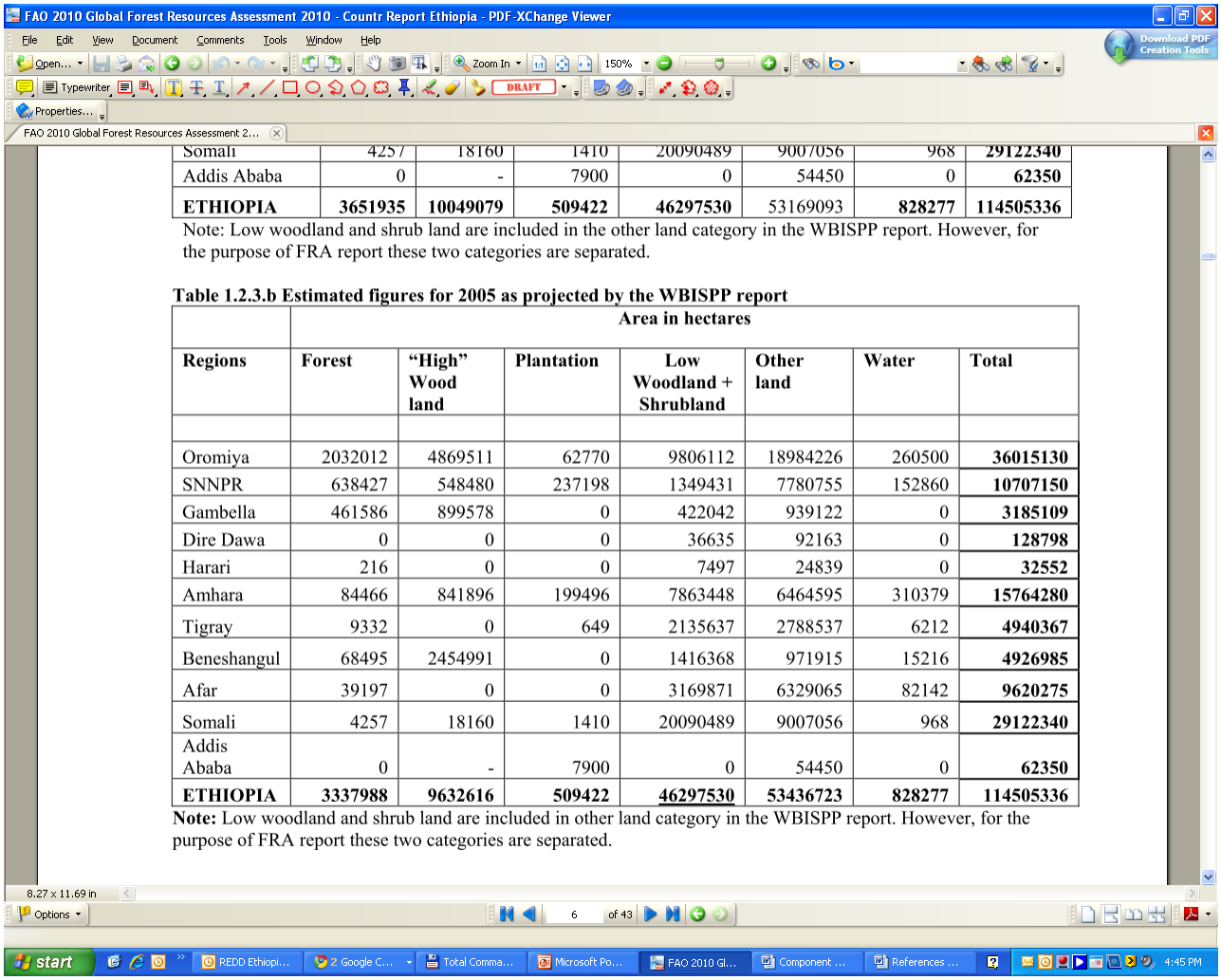
*both woodlands and bush lands combined; ** the FAO statistics on plantations refer only to productive (commercial) plantations, while the others did not distinguish the type of plantation; NA = not available.

The FAO forest resource assessment 2010 Ethiopia (FRA 2010) is based on WBISPP 2004 data. For the assessment the WBISPP (2004) data is calibrated with a factor of 0.96 regarding the total country area and reclassified: forest, high woodland area and plantations figures are combined to the FRA 2010 class forest. Low woodland and shrub land figures are combined to the class "other wooded land" (OWL). The land cover change trends observed 1990-2000 have been extrapolated linearly to estimate 2010 land cover in the FRA 2010.

Table 50 FRA 2010 forest cover estimates

FRA 2010 categories	Area (thousand hectare)			
	1990	**2000**	**2005**	**2010**
Forest	15114	13705	13000	12296
Other wooded land	44650	44650	44650	44650

Table 51 Estimated land cover 2005 as projected by the WBISPP report (Source: FAO, 2010)



Somali	4257	18160	1410	20090489	9007056	968	**29122340**
Addis Ababa	0	-	7900	0	54450	0	**62350**
ETHIOPIA	**3651935**	**10049079**	**509422**	**46297530**	53169093	**828277**	**114505336**

Note: Low woodland and shrub land are included in the other land category in the WBISPP report. However, for the purpose of FRA report these two categories are separated.

Table 1.2.3.b Estimated figures for 2005 as projected by the WBISPP report

	Area in hectares						
Regions	**Forest**	**"High" Wood land**	**Plantation**	**Low Woodland + Shrubland**	**Other land**	**Water**	**Total**
Oromiya	2032012	4869511	62770	9806112	18984226	260500	**36015130**
SNNPR	638427	548480	237198	1349431	7780755	152860	**10707150**
Gambella	461586	899578	0	422042	939122	0	**3185109**
Dire Dawa	0	0	0	36635	92163	0	**128798**
Harari	216	0	0	7497	24839	0	**32552**
Amhara	84466	841896	199496	7863448	6464595	310379	**15764280**
Tigray	9332	0	649	2135637	2788537	6212	**4940367**
Beneshangul	68495	2454991	0	1416368	971915	15216	**4926985**
Afar	39197	0	0	3169871	6329065	82142	**9620275**
Somali	4257	18160	1410	20090489	9007056	968	**29122340**
Addis Ababa	0	-	7900	0	54450	0	**62350**
ETHIOPIA	**3337988**	**9632616**	**509422**	**46297530**	**53436723**	**828277**	**114505336**

Note: Low woodland and shrub land are included in other land category in the WBISPP report. However, for the purpose of FRA report these two categories are separated.

For the purpose of consistency in data nomenclature and as a basis for future comparison and of sources (see suggested stepwise approach to develop a reference scenario in Component 3) the follwing background information shall be provided:

Five broad woodland and shrubland types are specified in the R-PIN:

1) Broadleaved Deciduous woodlands:

These woodlands are also referred to as Combretum-Terminalia woodlands, occur between 300 - 1,700masl with an annual rainfall of between 800-1,400mm.They dominate the woodland and shrublands of the western and southern lowlands and escarpments, and extend deep into the valleys of the Tekazze, Abay and Omo-Gibe valleys. Important genera are Terminalia, Combretum and Boswellia. A considerable area of these woodlands are infested with tsetse fly (Glossina spp.) precluding or restricting their use for livestock production.

2) Acacia Woodlands:

Acacia dominated woodlands are the climax vegetation for the higher rainfall areas of the Rift Valley and along the Eastern Escarpment in Amhara and Tigray Regions. The are found

between 1,500 and 2,00masl and in areas with an annual rainfall of between 800 - 1,000mm. These woodlands are dominated by Acacia species (A tortilis, A seyal, A. etbaica, A. mellifera, A. nilotica) as well as Balanites aegyptica and Commifera spp.

3) Lower Semi-arid Boswellia-Comiphora-Acacia Woodland-Shrubland:

These woodlands are also referred to as "Xerophilouos Open Woodland" by Piche-Sermolli; as "Acacia etbaica Woodland" by Gillett and "Acacia etbaica Association" by Watson. They are found in areas with lower annual rainfall, generally from 700mm down to 500mm. A wide range of species occurs which as well as Boswellia including Acacia atbaica, A. tortilis, A. melifera, Balanites aegyptiaca, and species of Acallypha, Barleria, Aerva, and Capparis, etc. These woodlands contain trees producing valuable gums and resins.

4) Lower Semi Arid to Arid Acacia-Commiphera Woodland-Shrubland:

These woodlands are referred to as "Broken Xerophilouos Open Woodland" by Piche-Sermolli and as "Acacia bussei Woodland" by Gillett and "Acacia etbaica Association" by Watson et al. They grade into Watson's "Acacia-Commiphera Wooded Bushland" and his "Haud Acacia-Commiphera Association". Annual rainfall is between 500mm and 350mm. Acacia species include A. bussei, A. tortilis, A. senagal, A.horrida, A. edgewothii, A. mellifera, and A. nubica. Other species include Albizzia anthelimintica, Commiphora spp., and Cordia spp. Referred to by Piche-Sermolli as "Sub-desert Scrub" and by Watson as "Arid Plateau Association". Annual rainfall is below 350,mm. The vegetation consists of sparse shrubs of A. tortilis, A. edgeworthii, A. horrida, Mimussops angel, Moringa peregrina, Salvadora persica and Ziziphus hamus.

5) Arid Sparse Shrubland:

It is in this woodland that Bally (1966) found Cordeauxia edulis a source of the Yehob nut in Somali Region. This plant is now on IUCN's list of endangered plants.

Nine natural vegetation types are distinguished in Ethiopia

(Sebsebe, 1996; CSE, 1997; Zerihun, 2000 in Lemenih and Woldemarian, 2010 forthcoming):

(1) Dry evergreen Afromontane vegetation

Location and Distribution: from 1500 to 3400 m asl in the central, eastern, south-eastern and northern highlands.

Characteristic species: Juniperus procera, Afrocarpus (Podocarpus) falcatus, Prunus africana, Ekebergia capensis, Olea spp., Apodytes dimidiata, Allophylus abyssinica, Euphorbia ampliphylla, Olinia rochetiana, Myrsine melanophloeos, Dovyalis abyssinica, Myrsine africana, Calpurnia aurea.

Extent of human disturbance: The most extensively inhabited vegetation zone in Ethiopia, where crop cultivation and grazing is widespread; forests have significantly diminished.

(2) Combretum–Terminalia (broad-leaved) deciduous woodland

Location and Distribution: between 500 and 1800 m asl, confined to western, north-western and parts of south-western lowlands.

Characteristic species: Boswellia papyrifera, Terminalia glaucescens, Acacia polycantha, Grewia spp., Stereospermum kunthianum, Acacia polycantha, Sterculia setigera, Oxytenanthera abyssinica, Balanites aegyptiaca, Annona senegalensis, Acacia senegal, Acacia seyal, Combretum adenogonium, Combretum collinum, Combretum molle.

Extent of human disturbance: Human influence is growing with settlements, mechanized crop cultivation (particularly sesame) and over grazing becoming threats to the vegetation.

(3) Acacia–Commiphora (small-leaved) deciduous woodland

Location and Distribution: between 900 and 1900 m asl, found in the southern and central Rift Valley, and eastern and south-eastern lowland.

Characteristic species: Acacia seyal, Acacia albida, Acacia senegal, Acacia etbaica, Acacia mellifera, Acacia drepanolobium, and other Acacia spp., Balanites aegyptiaca, Commiphora africana, Commiphora myrrha, and other Commiphora spp., 4 Boswellia spp., Moringa spp. many of which are regionally restricted endemics.

Extent of human disturbance: Traditionally occupied by pastoralists and agro-pastoralists, but the woodlands in the Rift Valley are being affected by cropland expansion, overgrazing, drought and unsustainable fuel wood harvest and charcoal making.

(4) Lowland dry forests

Location and Distribution: a special type of forest found only in Gambella Region and adjacent parts of southern Sudan between 450 and 600 m asl.

Characteristic species: Acalpha neptunica, Alstonia boonei, Baphia abyssinica, Celtis gomphophylla, Celtis toka, Milicia excelsa, Mimulopsis solmsii, Xylopia parviflora, Acacia mellifera, Combretum spp., Terminalia spp.

Extent of human disturbance: Previous threats were mostly from settled refugees and refugee camps, but now expanding due to dams, large scale farming and discovery of oil.

(5) Lowland semi-desert and desert vegetation

Location and Distribution: Areas below 900 m asl, found in the Afar at the north-eastern end of the Rift Valley and eastern Somali lowlands

Characteristic species: Deciduous shrubs, mostly Acacia spp., Hyphaene spp., some evergreen shrubs, many in the Euphorbiaceae, succulents and dwarf shrubs ‘forbs’. Patches of Commiphora and Boswellia species also exist.

Extent of human disturbance: Pastoralism practised for millennia, now being undermined by insecurity and refugee camps that are considerably affecting the vegetation negatively.

(6) Evergreen scrub

Location and Distribution: Along all the major river valleys, the Rift Valley Lakes, Lake Tana, and other smaller lakes and seasonally inundated valley bottoms of the plateau.

Characteristic species: Celtis africana, Ficus sycamorus, Mimusops kummel, Maytenus senegalensis, Acacia spp., Syzgium guineense, Afrocarpus falcatus and others woody species recruited from adjacent vegetation. Also numerous herbaceous species, including many endemic Orchidaceae, Poaceae, and Cyperaceae.

Extent of human disturbance: Woody species significantly affected by cutting for fuel wood and construction. Herbaceous species by changes in land use, e.g. expanding rice cultivation and drainage for cultivation of other crops, particularly vegetables.

(7) Wetland (swamps, lakes, rivers and riparian) vegetation

Location and Distribution: Replacing dry evergreen montane forest above 1500 m asl on steep slopes of the highland plateaus

Characteristic species: Euclea schimperi, Dodonaea angustifolia, Carissa edulis, Scolopia theifolia, Rhamnus staddo, Myrsine africana, Calpurnia aurea, Jasminum spp., Rosa abyssinica

Extent of human disturbance: Clearing for crop cultivation despite steep slopes and high erosion rates, woody plants collected for fire wood and fencing.

(8) Moist evergreen montane forest

Location and Distribution: the typical high forest (tropical) type of the country found in the south western parts, which are the wettest in the country, and southern slopes of the Bale Mountains; contains the most important timber species of the country

Characteristic species: Pouteria (Aningeria) adolfi-friederci, Pouteria (Aningeria) altissima, Olea capensis, Prunus africana, Albizia schimperiana, Cordia africana, Mimosops kummel, Wahlenbergia capensis and others

Extent of human disturbance: Previously inaccessible except by the local people, the moist forest was little affected by modern developments. However, since the 1970s, its rich timber resources have been heavily exploited, there have been extensive settlements from drought prone areas of the country, and many other commercial activities have attracted a huge human influx. It is now under severe threat from over logging as well as conversion into tea and other commercial plantations.

(9) Afroalpine and sub-Afroalpine vegetation

Location and Distribution: Areas over 3000-3200 m asl, on the upper slopes and tops of high mountains in the north, central eastern and south-eastern parts of the country; characterized by temperatures below freezing at night, over 10 C during the day, shallow soils, intense radiation and high rainfall.

Characteristic species: Erica forest with Hypericum revolutum and Hagenia abyssinica at the lower altitudes, i.e. around 3000 m asl,; above this clumps of giant Lobelia rhynchopetallum, bushland with dwarf Erica, Alchemilla haumannii and Helichrysum spp. and a taxonomically diverse herb flora including Kniphofia spp. Crassula spp., Aeonium leucoblepharum, Trifolium spp., grasses and sedges, with a high rate of endemism. This vegetation area is uniquely rich with its endemic birds and mammals such as Spot-breasted Plover, Abyssinian Wolf, Mountain Nyala, Walia Ibex and others.

Extent of human disturbance: Although people and their animals have used these areas for grazing for a long time, negative human impacts in this vegetation zone is a recent phenomenon. Population growth and land shortage are pushing people into this harsh and inhospitable environment as is clearly seen in the Simien Mountains National Park and the Bale Mountains ecoregion.

Annex 2a-3: REDD-Pilot projects

Table 52. REDD Pilot projects

Name	Size	Summary	Source
Humbo CDM Reforestation Project	2,728 ha	The Humbo project is a community-managed reforestation project in Humbo, Ethiopia. The project is located in the south-west of the country in World Vision's Humbo Area Development Project. The project has been hailed as a highly successful example of a development reforestation project that benefits the environment through improved natural resource management and increased biodiversity. It also contributes to poverty alleviation by creating a new community-based income stream through the generation of carbon offset credits under the Clean Development Mechanism (CDM, the Kyoto Protocol system reserved for developing countries.	Lemenih and Woldemarian 2010
Non Timber Forest Product (NTFP) project	347,381 ha	The Participatory Forest Management Programme (PFMP) of FARM-Africa and SOS Sahel Ethiopia has been operational since 2002 in Ethiopia and Tanzania. The objectives include: conservation through the establishment of sustainable forest management systems. Complementary natural resource management and Non-Timber Forest Products technologies have been adopted by local communities.	PFMP [17]
Bale Mountains National Park (BMNP)	500,000 ha	A proposed project between the Oromia State Forestry Agency and the Bale Eco-Region Sustainable Management Program (BERSMP). The goal is to implement a REDD project to protect and rehabilitate the natural forests in the Bale Mt. Eco-Region of Ethiopia. The project would cover an area of 0.5 million hectares and eventually a National Park with an	PFMP [18]

[17] http://www.pfmp-farmsos.org/pfmphome.htm

[18] http://www.pfmp-farmsos.org/Docs/Bale%20Mountain%27s%20REDD%20Project.pdf

Name	Size	Summary	Source
		additional area of 0.2 million hectares. The project will develop community based organization (CBO) forest management, joint forest management (JFM) and forest enterprise management (FEM) systems to reduce deforestation and to enhance carbon stocks by adopting sustainable forest management (SFM) practices. A prefeasibility study indicates that the project may be able to generate emission reductions of approximately 45 to 97 million mtCO2e over a 20 year period. The project developer (Oromia State Forestry Agency) is seeking partners to market the proposed project to potential carbon investors in order to secure additional financial backing to develop and implement the project.	
Project to analyze carbon potential of protected areas		The Ethiopian Wildlife Conservation Authority (EWCA) is presently investigating the carbon potential of its protected areas. It is suggested that in the REDD readiness process, one or two of its protected areas will be included as REDD readiness pilots. EWCA is charged with the management of 13 NPs, 9 of which have been up to middle of 2009 under regional authority. EWCA is also in charge of the 8 wildlife reserves of the country and administers the hunting industry. The nominal protected area system (including forest priority areas, national parks and sanctuaries, wildlife reserves, and controlled hunting areas) covers an impressive 14% of the country. Some of the PAs under EWCA contain substantial forests, which protect important watersheds. Forests outside the PAs are a regional responsibility.	EWCA
Bale Eco-Region Sustainable Management Project (BERSMP)	500,000 ha	The Bale Eco-Region Sustainable Management Programme (BERSMP) is a joint programme of FARM-Africa and SOS Sahel Ethiopia. The programme has been operating in the Bale Massif since the end of 2006 and brings local communities into a central role in sustainable natural resources management supported by government services, across the whole Bale Massif. Our	PFMP [19]

[19] http://www.pfmp-farmsos.org/BALE%20HOME.html

Name	Size	Summary	Source
		purpose is to support the government and local communities in the sustainable management of natural resources in the Bale Ecoregion(s) while contributing to sustainable livelihoods and the local and national economy	
Bamboo project	N/A	Addis Ababa, September 12 (WIC) – The Eastern Africa Bamboo Project has reportedly undertaken various tasks to generate foreign currency for the country by developing the bamboo resource, the project disclosed. Over 12 billion Birr can be generated every year if the country's bamboo resource is properly utilized.	EABP [20]
Kafa Coffee Biosphere Reserve	N/A	A large-scale community based Carbon Finance project for the voluntary carbon market reducing emissions from forest degradation and deforestation	KAFA [21]
Bale Mountains Carbon for Conservation and Communities REDD+ Project	700,000 ha	The Ethiopian Wildlife Conservation Authority in partnership with the Oromia Forest and Wildlife enterprise are planning to develop an integrated project whereby national park forest and priority forest areas outside the national park will merged to develop a REDD + project. This project is unique in that it would be the first of its kind to include a national park receiving certified credits, it large scale approx 700,000 ha and has enormous benefits form a conservation and community benefit sharing point of view. While PINs have been developed independently for both the Bale Mountains National Park and the Bale-eco Region project, the projects are now refining methods to assess reference scenarios taking a merged project into account and examining potential challenges and how to over come these challenges, of a merged project such as revenue sharing and mitigation strategies.	Dr. Anouska Kinahan anouskakinahan@fzs.org
Abote District project	2,000-3,000 ha	Afforestation/Reforestation	Lemenih and Woldemarian 2010
Ada Berga	500-6,000	Afforestation/Reforestation	Lemenih and Woldemarian

[20] http://www.eabp.org.et/about_us/

[21] http://www.kafa-biosphere.com/projects/

Name	Size	Summary	Source
District	ha		2010
Sodo Farmers	2,200 ha	Natural Regeneration & Agro-forestry project	Lemenih and Woldemarian 2010
Amhara National Regional State (under discussion)	20,000 ha	Afforestation/reforestation project	Lemenih and Woldemarian 2010
Yayu & Gedo	190,000 ha	REDD+ based project initiatives in Ethiopia	Lemenih and Woldemarian 2010
Baro-Akobo	7.6M ha	REDD+ based project initiatives in Ethiopia	Lemenih and Woldemarian 2010

As an example on the developments within these project details of the Bale Mountains REDD Project (presentation Tsegaye Tadesse, January 2010) are: expected emission reduction of approx. 80 Mil tCO_2e in 20 years, worth 320 mil $ US (ca 6.5 tCO_2e/ha/yr or 25 USD/ ha/ yr), investment costs ca. $US 2.5 million, based on voluntary carbon markets and a joint financial management including government and community in the cost/benefit sharing. Currently credits are being negotiated with a potential buyer. The project presentation includes an proposed outline for and institutional setting under the Oromia Forest and Wildlife Enterprise brokering the emission reduction certificates and other institutions / funds for the implementation, capacity building and payment distribution. A carbon model to calculate the expected emission reductions for the affected Woredas has been developed and legal institutional and technical designs and purchase agreements are prepared (presentation *Tsegaye Tadesse,* January 2010).

Annex 2b: REDD Strategy Options

Annex 2b-1: Ethiopian forest related institutions, projects and capacities

Table 53 forest related institutions

Nr	Institution	Contact	E-Mail
1	Federal and Regional Bureaus of Agriculture & Rural Development (Responsible for Forestry Sector).		
2	Farm Africa – SOS Sahel (Bonga Project – REDD component), Bale Project, Chilimo Project)	Tsegaye Tadesse	tsegayetad@ethionet.et
3	NTFP-PFM Project (REDD component) (Ato Aferwork Haile, EWNRA)	Mizen Teferi	
4	World Vision: Humbo Carbon Project (Afforestation)		
5	GTZ (supported Forestry Sector of many years)	Ulrich Mohr	ulrich.mohr@gtz.de
	GTZ-Project "Sustainable Development of the Protected Area System of Ethiopia" (SDPASE)	Dr. Ludwig Siege	ludwig.siege@gtz.de
6	DED		eth@ded.de
7	Institute of Biodiversity Conservation (IBC) [Ethiopian Biodiversity Institute (Undertook Forest genetic Resource Study)]	Berihun Gebremedhin	General: info@ibc-et.org
		Dr. Grima Balcha	dg-ibc@ethionet.et
		Dr. Kassahun Embaye	ddg-ibc@ethionet.et
		Demissew Taye	
8	Wondo Genet Forestry Faculty, Southern University	Dr Mulugeta Lemenih	elerohi@yahoo.com
		Dr Melaku Bekele	bekelemelaku@yahoo.com
		Dr Zeleke Ewnetu	zeleke_ewnetu@yahoo.com
9	Ethiopian Environmental Protection Authority (State of the Environment Reports)	Shimelis Fekadu	shimelisf@yahoo.co.uk
10	Ethiopian Forestry Research Institute (Part of Ethiopian Agricultural Research Organization)		
11	University of Addis Ababa: Institute of Economic Research	Dr. Dessalegn Ramahto	

Nr	Institution	Contact	E-Mail
12	Frankfurt Zoological Society	Dr. Anouska Kinahan	anouskakinahan@fzs.org
13	SOS Sahel Ethiopia, P.O. BOX 3262	Abdi Feyera (Director)	sos.sahel@ethionet.net
		Ben Irwin	benirwin@hotmail.com
14	Forestry Research Center, P.O.Box 30708 Addis Ababa	Dr. Zewdu Eshetu	zewdueshetu@gmail.com
		Dr. Yitebitu Moges	yitebitumoges@yahoo.com
		Ato Worku Zewde	workuzew@yahoo.com
		Ato Worku Adefires	adefires@yahoo.com
15	Shashemene Project	Dr Asferachew Munesha	
16	UNDP at Addis Ababa	Ato Ababu Anage	Ababa.org@undp.org
		Valdemar Holmgren	Valdemar.holmgren@undp.org
17	University of Addis Ababa: Science faculty for GIS and climate change related studies	Dr. Fiseha Etana	
		Dr. Woldamlak	
18	Halemeyha University		
19	Mekele University	Meley Mekonnen	Meley_araya@gmail.com
20	CIFOR	Dr Habtemariam Kassa	habtekasa@yahoo.com
21	Federal Research Center of the Ethiopian Institute of Agricultural Research (EIAR)	Wubalem Tadesse	wubalemtw@yahoo.com
		Dr. Demel Tektay	
		Abayneh Derero	abaynehdd@yahoo.com
		Dr. Fanty Woldyohanes	fparc@ethionet.et
22	UNIQUE consultants (carried out a legal due diligence report for the Bale REDD project)	Tsegaye Tadesse	tsegayetad@ethionet.et
		Ben Irwin	benirwin@hotmail.com
23	Bale Eco-Region Sustainable Management Programme (BERSMP)	Tsegaye Tadesse	tsegayetad@ethionet.et
		Ben Irwin	benirwin@hotmail.com
		Luuluu	
		Christian Held	
24	University of Bonn (socio-economic processes and ecological impacts of “Forest “Degradation” work)	Dr. Tadesse Woldemariam Gole	twgole@ethionet.et
			w.gole@uni-bonn.de

Nr	Institution	Contact	E-Mail
25	Oromia Forest and Wildlife Enterprise (OFWE)	Dr. Girma Amente	
		Dereje Jenbere	
		Ararsa Regassa	ararsareg@yahoo.com
		Beneberu Shimeles	bshimelis@yahoo.com
		Ahmed Hussein	Ahussein12@yahoo.com
26	BFE	Belay	
27	NTFP Southwest Project		
28	Save the Children US	Adrian Cullis	ACullis@savechildren.org.et
29	Land Administration Authorities		
30	USAID Support to Land Registration Project. (Supporting capacity building in land survey and registration techniques)		
31	Federal and Regional Investment Bureaus – Should have details of rural land allocation for agro-industrial development.		
32	Food Security Bureau in MoARD - Responsible for Voluntary Resettlement Programme.	Beamlaku Asres	
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39	Albert-Ludwigs-Universität Freiburg ongoing research on REDD for BMU (special expertise in biodiversity issues) http://www.landespflege-freiburg.de/forschung/redd.en.html	Christine Schmitt, PhD	
40	Johannes Ebeling, MSc, independent consultant, significant experience as senior consultant in African REDD project development (http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar2010/Draft Roster of Experts_03_04_10_Revised.pdf)	Johannes Ebeling	
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92	Ethiopian Rural Energy Promotion and Development Center (EREPDC)		

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95	Productive Safety Net Program (PSNP)		
96	EARI		
97	EMA		
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99	Meteorology Agency		
100	Ethiopian Foresters association		
101	Environmental society of Ethiopia		
102	Biological Society of Ethiopia		
103	Forum for Social Studies (FfSS)		
104	Christian Relief and Development Association (CRDA)		
105	National Steering Committee		
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Annex 2b-2: Preliminary assessment by the EDRI of impacts, cost and feasibility of strategy options

Intervention details
Agriculture intensification

Confidence level

Approach

- **Emissions in 2030**: 51,0 Mt CO2e (avg in 2010-2030)
- **Sequestration in 2030**: 35,1 Mt CO2e (avg in 2010-2030
- **Abatement cost**:
  - Per TCO2e: 11 USD
  - Per annum: ~385 mln $
- **Feasibility**: Medium

Uncertainty assessment

- Sequestration: high uncertainty related to the forecasted yield increase (70-90%) of demonstration plots
- Feasibility: need further assessment of best delivery model and assessment of current extension effectiveness
- Abatement Cost:: to be verified with working group (currently derived from East African project), need to be further assessed additionality vs. Ag. Intensification project

A. Program description

- Shift from low input production to improved production increasing productivity and soil fertility resulting in lower need for new agricultural land requirements:
  1. **Improved seeds:** introduction of TC, new varieties and high quality seeds
  2. **Irrigation:** introduction of basic/low cost irrigation systems
  3. **Fertilizer:** increase usage of fertilizers and manure
  4. **Agronomic practices**: introduction of planting and harvest and post-harvest management practices
- Programme will target 75% of the hh (~10mln) or an equivalent of 16MHa (~450k Ha/yr)
- Programme does not include required interventions in rural commercialization and access to market

B. Sequestration

- Most emissions result from clearing of forest (high forest, woodland and shrub land), causing ~56 tCO2/ha loss (average value of 1Ha of additional agriland – 67% coming from deforestation): permanent conversion creates 1-time loss of 100% of above and below ground biomass depending on the land converted
- Area deforested in 2010: 466 KHa; area deforested in 2030 (reference case): 635 KHa; area deforested in 2030 (green growth): 219 KHa - modelled from hystorical clearing rate, broken down according to WBISPP split of deforestation drivers
- Intensification allows savings of ~12 MHa of new agricultural land equivalent to ~35 MT CO2e/yr in 2030

C. Abatement cost

- **Household expenses:** CAPEX: 233$/Ha, OPEX (subsidized 10%): $7/Ha
- **Supporting investments:** improved seeds producers/ tissue culture (CAPEX: $250k/unit), fertilizer manufacturing (CAPEX: $100mln/unit), irrigation equipment manufacturing (CAPEX: $250k/unit)
- **Programme**: set-up $10mln (including initial feasibility study, capability building,…), extensions – $100/hh (in 3 years), 10$/hh in ongoing monitoring and management expenses
- **Research:** $10mln/yr to support research for efficient technologies, pilots plots, …

D. Other benefits

- **Employment:** ~22,000 jobs by 2030
- **Income**: ~$900/yr direct effect on income of the farmer resulting from improved yield (total of ~9bln $/yr by 2030)
- **Social indicators** : the proposed initiatives will improve sustainability, gender equality, education and health care access due to positive effect of increased income
- **Adaptation:** the proposed initiatives will improve adaptation to climate change and food security

E. Feasibility

- **Technology:** Technology is consolidated and tested
- **Delivery:** suboptimal delivery of management practices to farmers through the research and extension systems (critical with large scale intervention) call for large capability building and coordination effort, supporting legislation (e.g. tenure system) need to be implemented to align farmers' incentives
- **Financing:** Subsidies (from green financing) will contribute to remove initial adoption barriers. The main long-term driver for maintaining activities is the expected yield increase and reduced vulnerability

SOURCE: Team analysis

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Intervention details
Prepare new land for efficient agriculture (irrigation)

Confidence level

Approach

- **Emissions in 2010-30**: N/A
- **Sequestration in 2010-30**: 11,4 Mt CO2e by 2030
- **Abatement cost**:
  - LSI: $99,6/tCO2e, $919mln/yr
  - SMSI: $5,4/tCO2e, $20mln/yr
- **Feasibility**:
  - LSI: Medium-Low
  - SMSI: High

Uncertainty assessment

- Sequestration: high uncertainty related to current carbon content and deforestation trend from agriculture
- Feasibility: need further assessment of best delivery model
- Abatement Cost:: to be verified with working group, need to verify potential technological alternatives case-by-case

A. Program description

- Preparation of new land for efficient agriculture from soil with low carbon content:
  - 5b **Large Scale irrigation schemes**: irrigation schemes based on river diversion, river-dam reservoir, river-lift, groundwater lift,… Mainly intended to prepare new land from agriculture in pastoralist zones (lowland) – target of 2,7MHa (+2,2 MHa compared with Reference Case scenario – linear 110kha/yr)
  - 5c **Small and Medium Scale irrigation schemes:** basic/low cost irrigation systems and/or water harvest systems implementable at smallholder farmer level usually in Rainfall or Moisture Deficit zones – target of 0,5 MHa (+0,5 MHa compared with Reference Case scenario – linear 25kHa/yr)

B. Sequestration

- Most emissions result from clearing of forest (high forest, woodland and shrub land), causing ~83,75 tCO2/ha loss (average value): permanent conversion creates 1-time loss of 100% of above and below ground biomass depending on the land converted to agriculture
- Preparation of new land allows savings of ~2,7 MHa of new agricultural land equivalent to ~11,4 MT CO2e/yr in 2030 (135kHa/yr in period 2010-2030)

C. Abatement cost

- **Direct expenses:**
  - **LSI:** CapEx: 3,552$/Ha, OpEx: $178/Ha;
  - **SMSI:** CapEx: $233/Ha, OpEx: $2,3/Ha
- **Supporting investments:**
  - **LSI:** Irrigation equipment manufacturing: CAPEX: $5mln/unit
  - **SMSI:** Irrigation equipment manufacturing: CAPEX: 250k$/unit
- **Programme:**
  - **LSI:** set-up: 10 mln $ (including feasibility study,…), programme: $724/ha, M&Mt: $72/ha/yr
  - **SMSI:** set-up: 5 mln $, programme: $51/ha, M&Mt: $5/ha/yr
- **Research:** $12mln/yr to support research for efficient technologies best suited for Ethiopia context

D. Other benefits

- **Employment:** ~2,500 jobs by 2030
- **Adaptation:** the proposed initiatives will improve adaptation to climate change and food security

E. Feasibility

- **Scale-up of existing projects:** very little area currently irrigated (<5% of total cultivated land), realization of new irrigation schemes delayed, poor maintenance of existing irrigation infrastructures, realization of large hydro plant will provide water reservoirs for large scale irrigation schemes
- **Technology:** research is needed to identify cost-efficient technologies suited for Ethiopia context
- **Delivery:** most of the surface water potential is located in pastoralist areas but realizing potential in these areas requires innovations, as it poses significant changes related to pastoralists' traditional lifestyles
- **Financing:** LSI needs large investments that can become a major obstacle for implementation, unsuccessful leads to dramatic increase in cost

SOURCE: Team analysis

Intervention details
Grazing land management and pasture improvement

Confidence level

Approach

- **Emissions in 2030**: N/A
- **Sequestration in 2030**: 2.7 Mt CO2e
- **Abatement cost**:
  - Per TCO2e: 16.2 $/t
  - Per annum: ~23 mln $
- **Feasibility**: Medium

Uncertainty assessment

- Sequestration: uncertainty related to the soil type in Ethiopia
- Abatement Cost:: to be verified with experts and working group
- Feasibility: need further assessment of best delivery model and assessment of current extension effectiveness

A. Program description

- Increase grazing intensity and productivity (excluding fertilization), irrigate grasslands and species introduction, grassland closure will allow Increases the stock of C in the soil and (Indirect effect) lower pressure on native forests
- Programme will target 5MHa (2,5MHa from pastoralist areas and 2,5MHa from highland) – linear intervention: 250k/ha year

B. Sequestration

- 0,53 tCO2e/yr/ha according to IPCC methodology (with assumed split of soil type)
- Total sequestration by 2030 will be 2,7MTCO2e

C. Abatement cost

- **Direct expenses**: CAPEX: $58/Ha
- **Supporting investments:** improved seeds producers/ tissue culture (CAPEX: $50k/unit)
- **Programme:** set-up $1mln (including initial feasibility study, capability building,…), extensions – $13/ha (in 3 years), 0,4$/hh in ongoing monitoring and management expenses
- **Research:** $1mln/yr to support research

D. Other benefits

- **Employment:** ~1,000 jobs by 2030
- **Income:** the direct effect on income of the farmer resulting from improved livestock productivity is not accounted here (even if relevant) but under the 2.a Livetstock value chain improvement (aimed primarily at productivity increase) – this intervention will support the productivity increase
- **Adaptation:** the proposed initiative will improve adaptation to climate change and food security (increased livestock carrying capacity and more sustainable grazing)

E. Feasibility

- **Technology:** research is needed to identify interventions best suited for Ethiopia (e.g. species identification)
- **Delivery:** existing interventions in Ethiopia at local level, delivery is challenged by low economic incentive is property is shared (need ownership and coordination at community level), intervention should be combined with land management interventions
- **Financing:** After removing initial adoption barriers through green financing, might be difficult to generate a direct economic benefit that will support activities maintenance

SOURCE: Team analysis

Intervention details
Rural energy production

Confidence level

Approach

- **Emissions in 2030**: N/A
- **Sequestration in 2010-30**: 2.3 Mt CO2e
- **Abatement cost**:
  - Per TCO2e: 38.0 USD
  - Per annum: ~47mln
- **Feasibility**:
  - Medium-Low

Uncertainty assessment

- Programme description: evaluated only electricity generation from biomass, need to verify cost-effectiveness of micro-hydro and cost of connection to the grid (if considered alternative)
- Sequestration: need to further assess potential overlap with residue reincorporation in soil (Low Emitting Techniques)

A. Program description

- Several rural energy technologies have been assessed. Focus of the analysis is adoption of **electricity generation from biomass** (agricultural residues from agro processing) as is both attractive for large availability of residues and leads to substantial benefits in terms of emissions
- Installed capacity: 500MW by 2030 (linear adoption: 25k/yr) – e.g. equivalent to 25 medium scale plants (10MW) and 2500-5000 small scale plants (50-100Kw)
- Ideal target: Rural villages off-the-grid, Small manufacturing plants in rural areas

B. Sequestration

- Potential depends on base case:
  - Off the grid (alternative case - diesel generator): high potential
  - On the grid (alternative case – grid with zero emission electricity): very low potential just related to open burning of residues
- Hypothesis: 50% of installed capacity "off-the-grid"
- Sequestration potential: 4,7 tCO2e/Kw

C. Abatement cost

- Cost (including program cost, research, CAPEX for cogeneration plants, monitoring and management): 38,0 $/tCO2e
  - CAPEX: ~1,800 USD/Kw installed (equivalent to 90k USD for a small plant)

D. Other benefits

- **Employment:** ~1,800 permanent jobs by 2030, 250 temporary jobs/yr for construction
- **Income:** a small 50Kw system is expected to generate an income of 16,500 $/yr (equivalent to income of 165mln $/yr by 2030 for the installed capacity)
- Rural electrification likely to bring high benefits:
  - **Social development**: easier access to communication technologies (e.g. radio, TV,..), lower dependence from unhealthy energy resources (e.g. kerosene)
  - **Economic development**: support of local manufacturing facilities and potential extra income to farmers for selling agri residues at cogeneration plant
- **Technology transfer**

E. Feasibility

- **Technology:** Technology is still not fully stabilized and there a lack of successful references in Ethiopia
- **Delivery:** raw material (agri residues) highly available (currently no productive use), low awareness of the technology should be overcome with strong government intervention
- **Financing:** High initial investment key barrier for implementation but potential CDM funding available

SOURCE: Team analysis

Intervention details
Alternative green technologies

Confidence level

Approach

- **Emissions in 2030**: 40 Mt CO2
- **Sequestration in 2010-30**:
  - Abatement: 28 Mt CO2
  - Additional sequestration from forest regeneration: 15 Mt CO2e
- **Abatement cost**:
  - Per TCO2e: 1-63 USD
  - Per annum: ~80mln USD
- **Feasibility**: Very-High – Technologies are ready and proved to be efficient and economically viable (in particular efficient stoves and biogas)

Uncertainty assessment

- Programme Description: need to be verified impact of electric stove adoption on power sector / grid
- Sequestration: uncertainty related to the carbon content of the current forest, potential regeneration and regional differences

A. Program description

- Large scale introduction of cost-effective green technologies:
  1. **Efficient fuel wood stoves** (stoves with efficiency potential in the range of 30-60%)
  2. **Biogas** (gas digesters): biogas generation from biomass decomposition for cooking or lightning _ target: rural population
  3. **Natural gas (LPG) stoves**: cost-effective alternatives with lower emissions _target: urban population
  4. **Electric stove**: higher cost clean alternative _ target: middle income urban population
- Other technologies like improved techniques for charcoal production not considered at this stage

B. Sequestration

- In the reference case scenario 40 MT of biomass will be lost in 2030 due to degradation from unsustainable fuel wood collection (either for direct consumption or charcoal)
- Potential abatement of ~28 MTCO2e coming from degradation can be achieved through adoption of clean technologies
- Further increase in sequestration potential can be achieved through decrease of wood demand that will allow increase in carbon stock (forest yield): ~15 MTCO2e

C. Abatement cost

- Cost (including program cost, CAPEX, and supporting investments – production/maintenance facilities, distribution – excluding running cost of new technology) depends on the technology adopted:
  - Efficient stove: 0,8 $/tCO2e
  - LPG: 2,5 $/tCO2e
  - Bio Gas: 63 $/tCO2e
  - Electric: 5,5 $/tCO2e

D. Other benefits

- **Employment**: ~12k jobs (programs, maintenance and production facility)
- **Income** (delta vs. use of traditional technology): Efficient stove: +203 USD/yr; LPG: -94 USD/yr (running cost higher than traditional); Bio Gas: +500 USD/yr (high upfront cost compensated by 0 running cost – includes also income from fertilizer); Electric: -94 USD/yr (running cost higher than traditional)
- **Health**: Very high impact on health: Biodigester kills the bacteria in livestock manure, cooking is easier and cleaner, no smoke when using biogas
- Other income and education: more efficient cooking will free up time previously dedicated to fuel wood collection and time-consuming cooking with high benefits for other activities (e.g. education, income generation,…)

E. Feasibility

- Existing projects: Several projects (mainly in efficient stove) have demonstrated acceptance of the technology, economic viability (for both use and production)
- Need to identify scale-up mechanism and to support communication/demonstration of new technology (e.g. communication of both economic and health benefit)
- Income increase will lead to adoption of more expensive technologies in urban population (LPG, electric)

SOURCE: Team analysis

Intervention details
Forest management

Confidence level

Approach

- **Emissions in 2030**: N/A
- **Sequestration in 2010-30**: 8.1 Mt CO2
- **Abatement cost**:
  - Per TCO2e: 2,1-4,6 USD (forest-woodland)
  - Per annum: ~11mln USD
- **Feasibility**:
  - Medium-High

Uncertainty assessment

- Programme Description: potential need to be verified with research at regional level (ongoing) and working groups
- Sequestration: need to be verified with other datapoints/working group – currently using default data from Global Cost curve

A. Program description

1. **Wood plantation:** establishment of plantation of fast growing species for fuel wood consumption or timber
2. **Partecipatory forest management:** enable local communities to be part of decision-making in all aspects of forest management, from managing resources to formulating and implementing institutional frameworks
3. **Protected areas**: protection of forest areas primarily through mean of laws
   - Total of 2MHa of forest area managed by 2030, total of 1MHa of woodland managed by 2030
   - FM assumed to be linear with and average of ~150 kha/yr in 2010-2030

B. Sequestration

- Annual sequestration:
  - **Forest management** sequestration potential : 3,24 tCO2/ha/yr (based on experience Global Model for RoA)
  - **Woodland management** sequestration potential: 1,62 tCO2/ha/yr (assumed ½ of forest)
- Total potential sequestration of: 8,1 MtCO2e/yr by 2030

C. Abatement cost

- Based on estimates of upfront planting and ongoing monitoring costs
  - $2,1-4,6/CO2e/yr (high forest-woodland). Including:
    - **Direct expenses**: initial planting cost (CAPEX): $30/ha (terrain preparation, planting), OPEX 1,5$/Ha
    - **Supporting investments**: nurseries (CAPEX – $50k/unit)
    - **Programme cost**: set-up: 2 mln $ (including initial feasibility study, capability building,…); delivery: 13$/ha in 3 years; M&M: 0,9 $/ha/yr
    - **Research**: 2mln p.a.

D. Other benefits

- **Employment:** ~600 green jobs
- **Income of no-timber products:** ~$15/ha from:
  - Honey and Coffee
  - Others products (spices, herbal medicine, gum/incense)
  - Other economic activities (e.g. eco-tourism)
- **Income of timber product:** potential of $50/Ha from timber harvesting (assuming harvest every 10 years of ½ of total area)

E. Feasibility

- Existing projects: large scale project already successful implemented (e.g. Bale mountain – 600kHa) but other project failed due to low ownership from local communities and weak enforcement from local government
- Prerequisites: clear identification of suitable areas, strong participation from local communities, supporting institutional environment (policies), strong management and monitoring and sustainable economic benefit

SOURCE: Team analysis

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Intervention details
Afforestation/Reforestation

Confidence level

Approach

- **Emissions in 2030**: N/A
- **Sequestration in 2010-30**: 32,3 Mt CO2
- **Abatement cost**:
  - Per TCO2e: 4,8
  - Per annum: ~$81mln
- **Feasibility**:
  - Medium

Uncertainty assessment

- Programme Description: potential need to be verified with research at regional level (ongoing) and working groups
- Sequestration: need to be verified with other datapoints/working group
- Abatement cost: cost need to be verified with local projects (ongoing)

A. Program description

1. **Afforestation:** planting of trees on non-forest lands (e.g., grasslands, marginal pasture land, marginal cropland): 1 MHa from marginal agricultural area, and 1 MHa from marginal pasture land
2. **Reforestation:** reforestation on non-forest lands (degraded forest): 1 MHa
   - A/R constrained by land availability and requirements for new agricultural land
   - A/R assumed to be linear with and average of ~150 kha/yr in 2010-2030 period totaling ~3 Mha of area over the period

B. Sequestration

- Annual sequestration: 10,75 tCO2e/yr (from Humbo A/R Project in Ethiopia)
- Total potential sequestration of: 32,3 MtCO2e/yr by 2030

C. Abatement cost

- Based on estimates of upfront planting and ongoing monitoring costs
  - $4,5-5,3/CO2e/yr (afforestation-reforestation). Includes:
    - **Direct expenses**
      - Initial planting cost (CAPEX): $300/ha for Afforestation, $350/ha for Reforestation (including terrain preparation, planting, etc…),
      - OPEX (including maintenance, new trees,…): $15/Ha for Reforestation, $17,5/Ha for Afforestation
    - **Supporting investments**: nurseries (CAPEX – $50k/unit)
    - **Programme cost:** set-up: 2 mln $ (including initial feasibility study, capability building,…); delivery: 26 $/ha in 3 years; M&M: 1,8 $/ha
    - **Research:** 2mln p.a.

D. Other benefits

- **Employment:** ~5,000 green jobs
- **Income of no-timber products:** ~$15/ha from:
  - Honey and Coffee
  - Others products (spices, herbal medicine, gum/incence)
  - Other economic activities (e.g. eco-tourism)
- **Income of timber product:** potential of $50/Ha from timber harvesting (assuming harvest every 10 years of ½ of total area)

E. Feasibility

- Existing projects: Medium scale A/R project already implemented successfully in Tigray region; Large scale project implemented in 90s but failed for lack of maintenance (very low survival rate)
- Need clear identification of suitable areas, strong participation from local communities, supporting institutional environment (policies), strong management and monitoring and sustainable economic benefit (access to specific CDM funding securing cash flow will highly support feasibility)

SOURCE: Team analysis

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