Terminal Evaluation of Mainstreaming Incentives for Biodiversity Conservation in the Climate Resilient Green Economy Strategy (CRGE) of Ethiopia

Prepared for: **UNDP Ethiopia and Global Environment Facility**

Prepared by: **Alan Ferguson and Abera Gayesa Tirfi**

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Executive Summary

Project Title:	***Mainstreaming Incentives for Biodiversity Conservation in the Climate Resilient Green Economy Strategy (CRGE)***		
UNDP Project ID (PIMS #):	4644	**PIF Approval Date:**	
GEF Project ID (PMIS #):	5440	**CEO Endorsement Date:**	July 31, 2015
Award ID:	00087290	**Project Document (ProDoc) Signature Date (project began):**	Oct 2015
Country(ies):	ETHIOPIA	**Date project manager hired:**	1 June 2015
Region:	AFRICA	**Inception Workshop date:**	May 9, 2016
Focal Area:	Biodiversity	**Midterm Review date:**	July 2018
GEF-5 Strategic Programs: Objective 2; Mainstream Biodiversity	Outcome 2.2: Measures to conserve and sustainably use biodiversity incorporated in policy and regulatory frameworks	**Planned closing date:**	Dec. 2019
Trust Fund:	GEF TF	If revised, proposed closing:	N/A
Executing Agency:	Environment Forest and Climate Change Commission		
Other execution partners:	The Environmental Protection Bureaus of the Oromia, Amhara, Somali, Southern Nations Nationalities and Peoples Regional States		
Project Financing:	**at CEO endorsement (USD)**	**at Terminal Evaluation (USD)**	
GEF financing:	3,316,453	2,907,239 (88%)	
UNDP cash contribution:	200,000	331,906 (166%)	
Government cash contribution:	1,600,000	0	
Total cash financing:	**5,116,453 (3,648,360 actual)**	**3,239,145 (to 30-6-19)**	
Government in-kind contribution:	14,200,000	13,000,000 Unable to precisely calculate	
PROJECT TOTAL COSTS	19,316,453	16,239,145	

The Terminal Evaluation (TE) is an independent review, prepared in accordance with UNDP-GEF guidelines, of the progress made in achieving expected project outcomes; the relevance, effectiveness, efficiency and timeliness of project implementation; the issues requiring decisions and actions; and the lessons learned about project design, implementation and management. The TE field mission to Ethiopia occurred during July 15-Aug 3, 2019 and involved site visits, survey, interviews and group discussions with government officials, community stakeholders and others (Annex 4). The TE team consulted with 73 stakeholders in Addis, Nekamte, Arjo-Digga, Kulfo-SNNP and Bahirdar-Amhara, including discussions with 19 CBO community members. The available budget of the project was $ 3,648,360 USD, 88.8% of which had been spent by 30 June 2019, excluding in-kind contributions. The assumption that the government would provide $1.6 M in cash co-financing, mainly for alternative livelihoods development, has not been realized, although UNDP has been trying to secure some of this funding through various sources during the past year.

Development pressures on Ethiopia's biodiversity are significant. For example, from 2001 to 2018, Ethiopia lost 384,000 ha of tree cover, equivalent to a 3.2% decrease.[1] The project is important for addressing the decline in ecosystem services that support biodiversity and other values, and for Ethiopia's Climate Resilient Green Economy (CRGE) Strategy.

The primary achievement of the project has been the ability to mobilize partnerships between communities, local and regional/zonal authorities, universities and private firms in addressing the flooding, watershed and biodiversity issues associated with degraded lands in areas of high biodiversity. This is a significant achievement. Linking the CBO conservation efforts to the development sectors and the programs of the CRGE Task Forces was noted by participants as a key challenge that remains to institutionalize the process. The project experience highlights the incentives that are needed to generate a shift toward sustainable land and ecosystems management – namely extensive coordination, cooperation and cost-sharing between CBO members, government, universities and private sector for specific protected area and related sustainable livelihood outcomes.

The project has developed an effective community-based model for initial payment-for-ecosystem services (PES) schemes based on (i) legal CBO cooperatives mobilizing community involvement and cooperation, (ii) the leveraging of technical support and partnerships with local government, line agency experts and universities, (iii) an organised approach to pursuing PES buyers, and (iv) the use of community volunteer labour, savings and microcredit systems to assist alternative livelihoods development and reduce unsustainable land use practices. The policy, legal and institutional frameworks are still under development. Outcome 1 regarding biodiversity safeguards, conservation budgets and legally-incentivized PES financing has not been fully achieved. However, 15 PES agreements have been implemented for community protected area conservation and rehabilitation funded by public and private sector 'buyers' of these services alongside the 3.24 M USD in GEF/UNDP project funding expended to June 2019. The current PES agreements have so far generated over 7 Million ETB (244,000 USD) in funding excluding in-kind contributions. Project staff indicate that significant additional PES 'buyers' have shown interest if the legal directives can be established.

Local awareness of the biodiversity values and support for restrictions on open grazing, tree cutting and hunting were apparent in the group discussions and stakeholder interviews, along with appreciation for livelihoods development. The regeneration of vegetation cover and initial rehabilitation of watershed processes were observed during field visits to two of the four project sites, with related benefits to biodiversity conservation, ecosystem services, sustainable livelihoods, and community empowerment. Further development of this model

[1] https://www.globalforestwatch.org/dashboards/country/ETH

with added refinements from the project experiences can be expected once the policy and legal instruments are in place to encourage larger investment from prospective PES buyers.

The role of alternative livelihoods is a prominent aspect of the necessary incentives for conservation. A limited range and scale of livelihood activities were introduced using mostly project funds. The 43 CBOs involved in the project sites appear to be well organized and assisted by government advisors and programs. Nevertheless, the closure of the project may pose sustainability concerns at some CBOs unless further funding is secured to broaden and deepen the commitment to new sustainable livelihood opportunities that are necessary for active local protection and management of the Community Protected Areas (CPAs).

The technical decision support tools (biodiversity scorecards, digital maps, prioritization lists) provided essential input for CPA Management Plans that guide land use and watershed rehabilitation decisions. These plans are important and they need to be formally integrated into local, woreda and regional/zonal planning and budgeting as part of the institutional incentive structure for biodiversity conservation. The boundaries of the project CPAs have had to be expanded with local support, from the original planned 20,000 ha to about 34,000 ha due to leakage of restricted activities beyond the initial boundaries. Project staff are recommending even larger areas to encompass the full catchment basins.

Overall, with technical support from government agencies, reliable rainfall and UNDP/PMU project supervision, the physical works by the CBOs have shown good progress after three years and results from the current planting season also look promising at the sites visited. Seedling growth, fodder production (for 'cut & carry' stall feeding) and natural regeneration were evident. The protocol for gap filling and measuring survival rate of seedlings may need to be better defined and more consistent, and some of the gabion structures and check dams need follow-up assessment of performance. Some sites showed excessive soil erosion and insufficient surface runoff control along certain access paths and roads, indicating a need for basic drainage management along these routes.

The MIBC project has demonstrated proven results in rehabilitating degraded lands and ecosystems at four pilot sites which can provide the basis for similar national-scale initiatives. These results support the establishment of *Local PES Fund Platforms* at the project sites and in other regions. Sustainability and replication will be conditional on completing the policy and legal outputs under Outcome 1. Scale-up potential is also conditional on developing some formal involvement with the government's CRGE implementation structure, ensuring the community protected areas are an integral part of the CRGE implementation program.

Ten recommendations are provided for incorporation into the final Workplan. Further elaboration of each recommendation is provided in Section 6.2 of the report:

1. MIBC should update the PES Action Plan and facilitate its post-project implementation by EFCCC and UNDP including action on the Terminal Evaluation Recommendations and the related capacity development in support of the PES approach.

2. MIBC should prepare a concise, stepwise *PES Procedures Manual* based on PES principles and the project experiences to date to guide Commission staff and to supplement the PES Strategic Plan.

3. MIBC should strengthen the mandate and capacity of the Directorate for Ecosystem Valuation and Management in EFCCC to oversee and assist development and marketing of the PES approach for biodiversity conservation and ecosystem-based climate change adaptation (EbA), and to provide PES brokering services to regional and zonal offices.

4. MIBC should focus further economic valuation studies on demonstrating the business case for PES investments in ecosystem services and biodiversity conservation at a site level under the *Local PES Fund Platform* currently being developed by UNDP and EFCCC.

5. MIBC should ensure formal adoption of the pilot project Management Plans by the responsible government authorities including statements of commitment, budget and staff to support ongoing implementation and undertake revisions as needed and appropriate to encompass the catchment areas proposed by the implementing CBOs.

6. EFCCC and CRGE Steering Committee should establish an MOU to guide coordination with CRGE Task Forces in assisting PES agreements, biodiversity safeguards in CRGE and implementation of the *Local PES Fund Platform*.

7. EFCCC, in collaboration with the Ethiopia Biodiversity Institute and CRGE Facility, should develop and demonstrate practical *core indicators of ecosystem change* related to (i) land cover, (ii) hydrological systems, (iii) land degradation, (iv) habitat/population status for selected species, and (v) carbon sequestration that can provide better monitoring of results of PES agreements.

8. EFCCC should update the wording in PES agreements to ensure independent inspection and certification by government experts on works completed as per accepted standards.

9. The Government of Ethiopia should undertake an *Alternative Livelihoods Analysis* of potential livelihood activities and opportunities at Project Sites including those aimed at increasing the participation of women, which would facilitate the future programs for conservation of these sites.

10. The CBOs involved in implementing the Pilot Projects should prioritize physical demarcation of the protected area boundaries, establish benefit-sharing agreements for work undertaken on private (non-community) lands, and simplify the public communications messaging to encourage community support for the protected areas.

The key lessons from the project experience include:

- Area closure and active community involvement in protection and soil and water conservation can lead to visible results on-the-ground in a relatively short period;
- PES can offer short term incentives to shift land use practices but they have to be well-grounded in community organisations, governance and commitments to enforce restrictions and to support practices compatible with conservation of protected areas.
- Government policy change requires long, participatory processes especially if it involves revisions to high level strategies such as CRGE where biodiversity is not a main priority;
- Alternative livelihoods are an integral part of any conservation program and they need to have a prominent role in changing land use practices in protected areas; and
- There needs to be more careful attention during project inception to ensure an effective 'theory of change', M&E indicators that are relevant and usable, and that cash co-financing commitments are realistic.

The MIBC project has demonstrated an initial approach to Payments for Ecosystem Services based on local collaboration, coordination and cost-sharing that warrants further effort in developing this model. Policy level action is not yet complete four months before project closure but the pilot projects have shown preliminary success and good prospects for replication. On this basis, the overall project results are rated as Satisfactory.

Despite the good results at the local level, it is not apparent that the Government of Ethiopia (GoE) is fully committed to this approach, as evidenced by the inability after three years to establish a legal basis for PES (reportedly underway), failure to provide expected co-financing, and the incidental manner in which biodiversity conservation is treated within the CRGE program. For all the attention on national green growth, biodiversity remains a neglected element in Ethiopia's development pathway. Follow-up action during the final stages of the project provides an opportunity to address this concern. The recommendations in this report are presented as an integrated package that is intended to build upon the significant momentum established by the project.

Acronyms and abbreviations

BD	Biodiversity
BPER	Biodiversity Public Expenditure Review
CBO	Community-Based Organisation
CALM	Climate Action Through Landscape Management Project
CCA	Climate Change Adaptation
CPA	Community Protected Area
CRGE	Climate Resilient Growth Economy
EbA	Ecosystem-based Adaptation
EBI	Ethiopian Biodiversity Institute
EFCCC	Environment, Forests and Climate Change Commission
EWCA	Ethiopian Wildlife Conservation Authority
ETB	Ethiopian Birr
FDRE	Federal Democratic Republic of Ethiopia
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GIZ	Gesellschaft für Internationale Zusammenarbeit
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
ha	Hectare
M&E	Monitoring and Evaluation
MBIC	Mainstreaming Incentives for Biodiversity Conservation in CRGE
MEFCC	Ministry of Environment, Forest and Climate Change
METT	Protected Area Management Effectiveness Tracking Tool (GEF)
MoANR	Ministry of Agriculture and Natural Resources
MoU	Memorandum of Understanding
MTR	Mid-Term Review
NBSSAP	National Biodiversity Strategy and Action plan
NEX	Nationally Executed UNDP modality
NPBCR	National Policy on Biodiversity Conservation and Research
NTFP	Non-timber forest products
PER	Public Expenditure Review
PES	Payment of Ecosystem Services
PMU	Project Implementation Unit
PIR	Project Implementation Review
PMU	Project Management Unit
PSC	Project Steering Committee
REDD+	Reduced Emission from Deforestation and Degradation Program
RTA	Regional Technical Advisor
SLM	Sustainable Land Management
SNNP	Southern Nations, Nationalities and People's State
TE	Terminal Evaluation
ToR	Terms of Reference
UNDP	United Nations Development Programme

Acknowledgements

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1. Introduction

1.1 Purpose of the evaluation

Mainstreaming Incentives for Biodiversity Conservation in the Climate Resilient Green Economy Strategy (CRGE) is a Government of Ethiopia project supported by United Nations Development Programme (UNDP) and the Global Environment Facility (GEF). The project has aimed to (i) establish a framework for valuing and integrating biodiversity into Ethiopia's Climate Resilient Green Economy Strategy (CRGE) and related development processes, and to (ii) demonstrate a programme of Payments for Ecosystem Services (PES) that could be eventually scaled up in the country. The project commenced in October 2015 and is scheduled for completion in December 2019.

This Terminal Evaluation (TE) is an independent review prepared in accordance with UNDP-GEF guidelines, of the progress made in achieving expected project outcomes; the relevance, effectiveness, efficiency and timeliness of project implementation; the issues requiring decisions and actions; and the lessons learned about project design, implementation and management. The objective of the evaluation is to provide a comprehensive and systematic accounting of performance, and assess project design, implementation, likelihood of sustainability and possible impacts. The Terms of Reference specify that the evaluation is to conform to the *Guidance for Conducting Terminal Evaluations of UNDP-Supported GEF-Financed Projects*, (UNDP Evaluation Office, 2012) and to address five main evaluation criteria: Relevance, Effectiveness, Efficiency, Sustainability and Impact. The Terms of Reference are presented in Annex 1. A TE Inception Report was prepared and approved by UNDP in mid-July 2019, setting out the approach, methodology, work tasks and schedule.

1.2 Key issues highlighted

The inception phase of the evaluation identified a few key issues to be particularly considered in the evaluation, including:

- *Legal framework*: extent to which the proposed PES framework will been adopted and enacted and sufficiency of agreements currently in place for PES development.

- *Institutional change*: capacity to use of conservation tools (scorecard, mapping, mitigation plans) and apply incentives at the four project pilot sites.

- *Level of mainstreaming of conservation into development policy, plans and plan implementation*: commitments to conservation reflected in land use and development decision making to address biodiversity conservation.

- *Capacity development*: Results of the extensive training activities and other activities for enhanced awareness, capacity and PES brokering and any gaps that may exist.

- *Development of alternative livelihoods*: Project design does not provide for incentives for introducing sustainable land use practices to support conservation restrictions.

- *Mechanisms for sustainability and scale up*: the basis for ensuring that positive results are sustained and that they provide models for replication and scale-up.

- *Financial support for PES schemes:* the potential access to PES co-financing and other biodiversity conservation financing from government and financial institutions.

- *Biodiversity conservation budgeting:* impact of the BD expenditure tracking on subsequent allocations for conservation and ecosystem services protection.

1.3 Methodology of the evaluation

The evaluation was guided by the Terms of Reference and the Evaluation Matrix (Annex 1). The methodology was based on:

(a) Review of documents, reports that describe progress on project outputs, outcomes and objectives as per indicators in the project design,

(b) Compilation of data on project deliverables and status of outputs, and the biodiversity conservation trends at the project sites,

(c) Email Survey of CBO activities and status sent to the local project officers,

(d) Discussion of key issues and lines of inquiry with project executive and management team regarding strengths and weaknesses of project design and execution,

(e) Self-assessment of achievements by project staff and participants,

(f) Interviews with project participants and stakeholders to verify achievements and to identify issues related to project design and implementation,

(g) Where feasible, group discussions to review project experiences and lessons learned,

(h) Site visits to compile evidence of achievements and to consult with beneficiaries and stakeholders, and in the final analyses,

(j) Triangulation and corroboration of comments by participants regarding project results, implementation and lessons.

The evaluation included quantitative and qualitative analyses of project achievements in relation to baseline conditions and the expected results presented in the Project Document (2015). It also drew upon the conclusions and recommendations of the MTR report. The first phase of the evaluation involved compiling detailed information on the indicators outlined in the Evaluation Matrix (Annex 1). Site visits were made to two of the pilot projects and interviews were held with 73 participants from three of the project sites (Annex 4). Notes from these field discussions and observations are presented in Annex 8. A survey questionnaire was also used to collect data on the status of the CBOs to supplement the interview data (Annex 11). The Evaluation Matrix included "Number of agencies and people (M/F) that participated"- Annex 6 identifies input from women (12% of 73 interviewed).

The evaluation tasks included:

- Data collection and compilation undertaken in cooperation with the management teams by completing background tables on project activities, outputs and finances.
- Interviews with project beneficiaries and participants and project management and partners at the field level, assisted by an Interview Guide (see **Annex 6**), to assess results, implementation challenges and lessons learned.
- Analyses of the project design and assumptions, implementation performance and measurable results in comparison to the project

management plans and results indicators and targets, and identification of any gaps between design and delivery.

- Field site visits to two of the four project sites and comparative before and after information to verify reported results on the key project interventions.

In all of the discussions, an emphasis was placed on collegial and constructive dialogue and compiling reliable observations project performance and lessons. The interviews were assisted by an Interview Guide which provided lead questions that facilitated consistency and triangulation of responses from those interviewed. The evaluation involved an objective and independent review of the *weight of evidence* compiled from reports, interviews/group discussions and site visits. Reasons for conclusions, ratings and recommendations are provided based on the evidence. The evaluation also included key lessons from the project that have implications for the exit strategy and/or for future projects.

In accordance with UNDP/GEF evaluation requirements, project Relevance was rated as:

Relevant (I) or
Not relevant (NR)

The project Effectiveness, Efficiency and M&E systems were rated in terms of:

Highly satisfactory (HS). The project had no shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

Satisfactory (S). The project had minor shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

Moderately satisfactory (MS). The project had moderate shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

Moderately unsatisfactory (MU). The project had significant shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

Unsatisfactory (U). The project had major shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

Highly unsatisfactory (HU). The project had severe shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

Sustainability was rated according to the following scale:

Likely (L) negligible risks to sustainability, with key outcomes expected to continue into the foreseeable future.

Moderately Likely (ML) moderate risks, but expectations that at least some outcomes will be sustained

Moderately Unlikely (MU) substantial risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on.

Unlikely (UL) severe risk that project outcomes as well as key outputs will not be sustained

Impact was rated according the following scale:

Significant (S)
Minimal (M)
Negligible (N)

2. The Project and its Development Context

2.1 Project history

The project originated in GEF dialogue between national, regional and local stakeholders. During the preparation of the project in 2011, concept notes were solicited from relevant stakeholders. Six regions/groups including universities submitted concept notes, some including not only Biodiversity (BD), but also Land Degradation (LD), Climate Change Adaptation (CCA) and Climate Change Mitigation (CCM). The project was designed in 2013 and the GEF project PIF was approved on August 7, 2013. The Project Concept was subsequently approved by GEF Secretariat on November 1 2013, and approved for implementation in September 2015.[2]

The project is part of Ethiopia's plans to follow a green economy pathway that fosters sustainable development. The Climate Resilient Green Economy (CRGE) Strategy was published in 2011, based on the vision for Ethiopia to develop a climate-resilient green economy and to attain middle-income status by 2025. The CRGE is based on four pillars: (1) Agriculture: improving crop and livestock productivity to ensure food security and improvement in farmers' livelihoods while mitigating emissions; (2) Forestry: protection and reforestation for economic and ecosystem services; (3) Power: expanding electricity generation to include renewable energy for domestic and

[2] https://www.thegef.org/project/mainstreaming-incentives-biodiversity-conservation-climate-resilient-green-economy-strategy

regional markets; and (4) Transport, industrial sectors and infrastructure: leapfrogging to energy efficient technologies. The CRGE strategy adopts a sectoral approach across six government ministries with more than sixty initiatives to be implemented. The strategy was initiated to protect the country from the adverse impacts of climate change by identifying environmentally sustainable economic opportunities that could accelerate the country's development.

The Mainstreaming Incentives for Biodiversity Conservation (MBIC) Project aimed "to put in place safeguards to ensure that the current high level of growth and planned investments do not impact negatively on biodiversity." The project aligns with the main environmental policies of Ethiopia. These include the *National Policy on Biodiversity Conservation and Research* (NPBCR) as well as the *National Biodiversity Strategy and Action Plan* (NBSAP)[3] which provide policy context for the project. The *Environmental Policy of Ethiopia* has an overall objective is to promote sustainable management and use of the natural, man-made and cultural resources of the country. This is a major challenge. Since 2000, Ethiopia has lost 3.2% of its tree cover (based on areas >30% tree cover), averaging 25,632 ha per year, of which 4,434 ha of loss were primary forest.[4] The NBSAP aims to mainstream conservation of biological diversity within strategic land use plans, local level plans and sustainable agricultural and pastoral production strategies.

These policies work to conserve biological diversity and facilitate economic benefits provided by biodiversity conservation efforts, for example, through the implementation of Payment for Ecosystem Services (PES). GEF has adopted a flexible view of PES. The concept has been defined as an arrangement between buyers and sellers of environmental goods and services in which those that pay are fully aware of what it is that they are paying for, and those that sell are proactively and deliberately engaging in resource use practices designed to secure the provision of the services.[5] The GEF Biodiversity Focal Area Strategy makes reference to PES as a mechanism to help achieve two Objectives: 1) the Sustainable Financing of Protected Area Systems at the National Level and 2) Fostering Markets for Biodiversity Goods and Services. GEF supports the design and implementation of PES schemes as revenue mechanisms to support biodiversity conservation in protected areas and to compensate resource managers for off-site ecological benefits associated with biodiversity conservation-compatible land-use practices.

[3] Ethiopia Biodiversity Institute, 2015; Ethiopia's National Biodiversity Strategy and Action Plan 2015 – 2020, Addis Ababa, Ethiopia.
[4] https://rainforests.mongabay.com/deforestation/archive/Ethiopia.htm
[5] GEF Investments on Payments for Ecosystem Services Schemes, GEF n.d.

A national inception workshop for the project took place on May 9, 2016 in Addis Ababa, where Ministry of Environment, Forests and Climate Change (MEFCC) formally launched the project. A request was made to accelerate start up and deliver timely results. Several suggestions were also made at the workshop to focus 70% of the effort on communities' livelihood diversification and biodiversity conservation, and not more than 30% of the project total budget on studies, training and capacity development.[6] This was later deemed not consistent with the project design: the livelihood benefits were to be in the form of payments for ecosystem services provided by the communities in the project target sites and the project focus was to promote and support a PES demonstration project, not a direct livelihood support project. It was also decided to forego the planned appointment of a senior technical advisor and to utilize the funds for a support function provided by the Ethiopia Institute of Biodiversity and experts from the Ministry of Environment and Climate Change. Similar inception workshops were held at the four pilot project sites – see Figure 1 below.

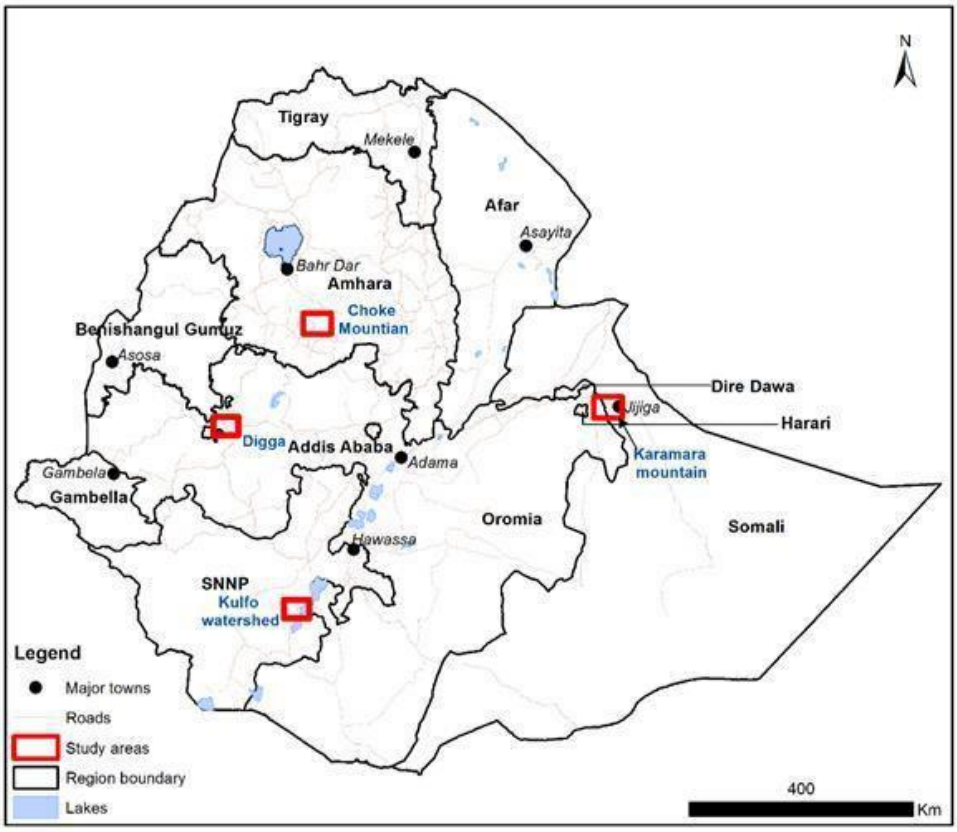


Figure 1: Pilot Project Sites

[6] Report of the Inception Workshop for the Project 'Mainstreaming Incentives for Biodiversity Conservation in CRGE, Organized by Ministry of Environment, Forest and Climate change, May, 9, 2016

2.2 Problems that the project seek to address

The Project Document highlighted several major problems associated with habitat loss and the degradation of ecosystems and ecosystem values and services as a result of unsustainable development activities, especially deforestation and conversion of forests, woodland and shrub land into agricultural land. Over grazing of rangeland, over-cultivation of cropland, water logging and deforestation are the main drivers of habitat degradation. Recent reports show the number of cattle are exceeding the available land's carrying capacity in many areas, and some rangelands are degraded. Fuelwood and fodder are becoming increasingly scarce, watercourses are drying up, thorny weeds have become predominant in once-rich pastures; footpaths disappear into gullies, soils becoming thin and stony, and as a result reduced yields from agricultural land with strong implications for future food security.

Nearly 95 percent of the Ethiopia's energy consumption comes from biomass fuels. This includes fuel wood, charcoal, branches, leaves and twigs. Charcoal is currently made, sold, transported, and used as a major source of fuel in most urban and rural areas despite a recent Government ban on its use. Its prevalence along the roadsides means that enforcement is lacking. Firewood consumption is expected to increase in the same proportions. Unsustainable fuel wood consumption prevents forests from regenerating, and leads to increased vulnerability to climate change. Deforestation ultimately strips the land of its vegetative biomass, exposing it to high levels of soil erosion. In a 'business as usual' scenario, this level of deforestation and degradation is expected to worsen in the coming decades, as population grows at 2-3 per cent per year. Estimates indicate that the economic losses from soil erosion alone could lead to a 2-3 percent drop in annual agricultural GDP, which would have major negative repercussions on Ethiopia's already precarious food security situation. This picture is complicated even further by the higher probability of extreme weather conditions arising from climate change and increased variability in rain and temperature.[7]

In order to achieve the ambitious goals set forth by the Growth and Transformation Plan (GTP) and the Climate Resilient Green Economy (CRGE) Strategy aiming for middle-income country status by 2025, the annual economic growth rate needs to be

7 GEF-5 PIF Ethiopia BD PIMS 4644, 2013

sustained at over 10%. This will inevitably have an impact on biodiversity since most of the envisaged investments involve land conversion for agriculture. The CRGE Strategy was designed to address this challenge by putting in place safeguards to ensure that the current high level of economic growth and planned investments do not impact negatively on biodiversity.

The root causes driving biodiversity loss include high population growth and changing population dynamics, high reliance on natural resources for economic development compounded by low levels of economic development and changes in consumption patterns, also the globalization of agricultural markets without adequate protection of biodiversity.

Lack of proper recognition of the inherent importance of biodiversity to the livelihoods of the majority of the population of Ethiopia and the dependence of the whole country on ecosystem services provided by the land groups of rural people manage is exacerbating these root causes. The main barriers were identified as:

- Lack of a coherent incentive framework to curtail habitat loss and degradation with very short term planning horizons, and
- Lack of capacity and decision support tools to check adverse development and its impact on biodiversity.[8]

The project is expected to "remove barriers to enable utilization-based conservation practices where biodiversity becomes part of the GTP that will improve food security while simultaneously promoting ecosystem provisioning, provide institutional and policy enabling environment and utilize markets for mainstreaming incentives for biodiversity conservation".[9] The project concept stated:

> *There is an urgent unmet need to ensure that the current high level of growth and planned investments do not continue to impact negatively on biodiversity.* This is especially important for the majority of Ethiopians for whom biodiversity is an important asset that help to deliver key ecosystem services (e.g. food security, clean and secure water supplies, greater resilience to extreme weather events). The CGRE does not adequately address biodiversity concerns. This project is designed to address this need by putting in place *safeguards to ensure biodiversity is protected* amidst this flurry of rapid economic growth and development. The project aims to change the trajectory of development through ensuring biodiversity is mainstreamed at the national and landscape level. At the national level, the project will put

[8] Project Document, 2015, p. 19.
[9] GEF/UNDP Project Document, 2015, P. 17

in place decision support tools and build the capacity of relevant staff to ensure land use and infrastructure placement decisions do not impact negatively on biodiversity. At the landscape level, the project will pilot payments/incentives for biodiversity conservation as a mechanism for compensating landholders for avoided land conversion. The payments will trigger a shift from contra-conservation to conservation-compatible land uses and provide the additional incentive needed to engender the desired changes in land use.[10]

2.3 Immediate and development objectives of the project

The Project Objective is "to ensure that the biodiversity of Ethiopia is better protected from current and future threats by ensuring development and investment decisions do not impact negatively on biodiversity"

The project was designed to not only address the need to raise conservation biodiversity awareness but also to put in place safeguards – including legal frameworks – to ensure that the current high level of growth and planned investments do not adversely affect biodiversity. The project further promotes the involvement of communities in income-generating biodiversity conservation activities through the implementation of PES schemes adapted to the circumstances and opportunities at selected pilot project sites. Similarly, Ethiopia's environmental protection policies and poverty reduction strategies emphasise the need to involve local communities in the sustainable management of natural resources.

2.4 Main stakeholders

The project is being implemented by the Ethiopia Environment, Forests and Climate Change Commission (EFCC), earlier designated as the Ministry of Environment, Forest and Climate Change (MEFCC), and its counterpart line agencies at the regional and local level. At the national level, a project management unit (PMU) has been established within the EFCC and coordinates local project teams led by site coordinators at each of the four project sites. The implementing partners include: i) the State Environment Bureau in Somali regional state, coordinating activities in Hadew site; ii) the Zonal Environment Office in Amhara located in the East Gojiam zone, coordinating activities in Choke site; iii) Zonal Environment Protection, Forest and Climate Change Office in SNNP located in Gamo zone; and iv) the District Environment Office in Oromia state, coordinating activities in Diga site.

[10] GEF-5 PIF Ethiopia BD PIMS 4644, 2013, p.5

The key beneficiary stakeholders include households who are members of the participating CBOs, usually in the form of legally-established cooperatives:

Diga pilot project: 1403 households involved in forest conservation and watershed rehabilitation on 12,000 ha of land in Arjo-Digga woreda of Oromia state.

Kulfo pilot project: 386 households involved in forest conservation, watershed rehabilitation and alternative livelihoods on 7,500 ha in SNNP state through the Gamo Zone Environmental Protection, Forest and Climate Change Office.

Choke pilot project: 5082 households involved in soil and water conservation and watershed rehabilitation on 12,992 ha in the Choke Mountain Community Conservation Area and various livelihood activities such as apple production, malt barley production, poultry raising, entrepreneurship, and livestock forage development under the direction of the East Gojjam Administrative Zone of Amhara National Region State.

Hadew pilot project: 1372 households in involved in rehabilitating land on 1500 ha in conjunction with Somali Regional State Environment Bureau.

2.5 Expected results

The expected results are presented in the Project Document as follows:

Outcome 1: Enabling framework for mainstreaming incentives for biodiversity conservation into the CRGE at national level will support the development of a framework for recognizing the value of biodiversity to the economy. It includes clarification of government spending on biodiversity (coding the budget and undertaking a public expenditure review) to catalyse more investments in biodiversity. It will also include ensuring that decision makers have the requisite information for decision making through the provision of improved data, decision support tools and training.

Outcome 2: Payments for biodiversity conservation and wider ecosystem services will pilot a programme in four sites recognized globally for their high biodiversity value but that are also at high at risk of degradation. The project will put in place a system for compensating land users who engage in biodiversity friendly practices.

3. Evaluation Findings

3.1 Project Formulation

3.1.1 Results framework and project strategy

The project strategy as presented in the Project Document aims to overcome two barriers – lack of capacity and decision support tools to address adverse development impacts on biodiversity, and lack of an incentive framework to reduce habitat loss and degradation, particularly through PES arrangements. The focus is on:

(1) integrating biodiversity conservation into national accounts and "ensuring no financing for investment that results in negative impacts on biodiversity" through a Biodiversity Expenditure Review, decision support tools (biodiversity mapping and scorecards) and inter-agency cooperation (Outcome 1); and

(2) initiating PES on 20,000 ha at four pilot project locations through a) technical assistance/extension on biodiversity-friendly land use practice (Output 2.1), b) institutional capacity development (Output 2.2), c) increased government investment in PES with future funding proposed under CRGE (Output 2.3), and d) increased awareness and understanding at policy and public levels.

The TE discussions noted that it has been difficult to operationalize this strategy without the necessary policy/legal framework in place in advance and without adequate sub-strategies to provide alternative livelihoods to offset the restrictions and conditions associated with adopting new practices that significantly change land, water and forest management. The arrangements for generating financial support for ecosystem services rehabilitation and conservation have been complex, cross-sectoral and site-dependent. PES Agreements are only one tool needed to incentivize and support the project Objective. Few actual biodiversity safeguards were produced under Outcome 1 to ensure "no negative development impacts on biodiversity".

The PES concept requires land users (suppliers/sellers) to voluntarily abide by certain contractual sustainability conditions and where necessary to modify current unsustainable practices to meet these conditions in order to provide agreed benefits to the ecosystem service buyers (users) and owners. This usually requires introducing alternative livelihoods and diversifying livelihoods to reduce the impact of unsustainable practices; e.g., shift from open livestock grazing to cut and carry and stall feeding; e.g., shift from traditional farming practices to conservation agriculture; e.g., shift from charcoal production to other sources of fuel and agricultural income.

The project design anticipated PES revenues to support conservation but the costs of introducing livelihoods were expected to be funded by government and communities.

A range of PES types were identified in the PES Strategic Plan:

- **Archetypal "contractual" PES** whereby Ecosystem Service (ES) beneficiaries voluntarily pay ES producers for generating the ES, such as the agreements between a safari or a water company on the one hand and communities on the other hand;
- **PES funded voluntarily by grants**, for example to NGOs, which will implement PES schemes under conservation contract form;
- **PES funded by a fee or tax** imposed on consumers of that particular ES, for example by a water company;
- **PES incentivised by fiscal measures**;
- **PES funded by the government** (either through a non-ES specific tax or through the national budget).[11]

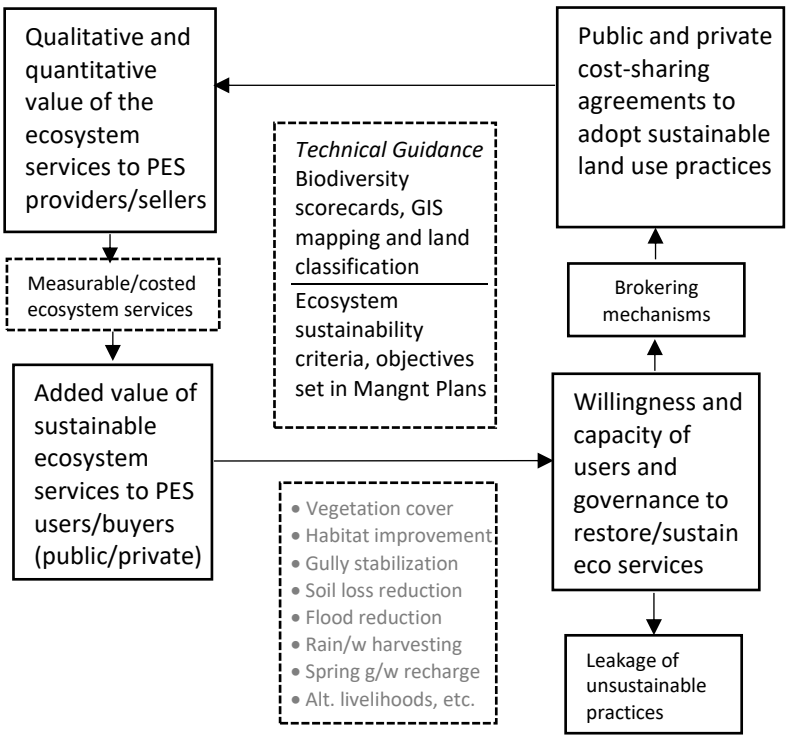
It is not clear whether this categorization offers sufficient distinction between i) voluntary PES agreements, ii) informal public contributions and donations, and iii) updated resource rents/tariffs to recover costs of sustaining ecosystem values.

The PES payments (Annex 8) have so far played a limited role even though substantial progress has been made to improve ecosystem conditions and alternative livelihoods. For example, in the Arjo-Diga project site, about 11 M Birr ($360,000) has been expended on project activities to July 2019, 80% of which has been funded by the project (according to project staff) and the remainder by UNDP, government, local people and, to a less extent, PES agreement. Annex 8 shows 2.477 M Birr ($85,000) or 23 % of project expenditures have been generated by PES agreement for this specific Diga site to date. A similar situation occurs at the Kulfo Forest site, as shown on Annex 8, where about 20% of the 10-12 M Birr project expenditures have come from PES and external sources although much more PES funding is promised and anticipated. Physical works and livelihood alternatives have required joint project/PES funding.

The project design placed considerable dependence on ecosystem valuation and PES agreements to stimulate and provide for reduced biodiversity habitat loss along with ecosystem rehabilitation and conservation. The project implementation experience reflects a complex set of factors that influence results for both owners and buyers of ecosystem services (see Annex 8). Figure 2 outlines some of these factors.

[11] EFCCC, Ethiopia PES Strategic Plan, 2018, p. 15

Figure 2: MIBC Project Context for Payments for Ecosystem Services



The project undertook biodiversity score carding and GIS mapping and land classification at selected high-priority biodiversity conservation areas. This highlighted the ecosystem productivity and sustainability criteria and management thresholds, objectives, directives and uncertainties to guide interventions. The valuation exercise involved estimating overall ecosystem values and identifying those for which ecosystem service buyers/users are willing to finance. Not all of these ecosystem services were "measurable and costed" for PES agreements although the technical assessments through decision support tools assisted in identifying the values that were relevant for the project site management plans. The effective values depended upon the perspective of the valuer, and the willingness and capacity of providers and governance systems (local, regional, national) to sustain or restore the attributed values are a precondition to establishing PES arrangements of all sorts.

Well-defined ecosystem services resulting in increased vegetation cover, enhanced habitat, land stabilization, soil loss reduction, etc. are therefore important for guiding PES agreements. Changes in land use restrictions may also push unsustainable practices to adjacent areas. Brokering mechanisms generated a variety of negotiated formal and informal agreements to facilitate sustainable practices that reflect the vested interest of both owners and buyers, some of whom may be the same.

A combination of MIBC project funds, government and PES resources were characteristic of the project implementation, with various gaps in livelihood support noted by project participants (see Section 3.3.4 Outcome 2). This is a much more complicated set of conditions and results than envisioned for the original seller-buyer interactions in the project design.

The following observations on the project strategy were derived from the project site visits:

- Sustainable livelihoods are an essential part of restoring or maintaining ecosystem services and PES agreements have not been sufficient to finance ecosystem conservation and rehabilitation but they can serve as a catalyst for ecosystem service awareness, government regulation and community voluntary action to protect and restore forest landscapes. While it is possible for PES sellers to provide discrete environmental benefits such as reduced land instability above a hydroelectric transmission line, or enhanced water source yields for sugarcane plantations to willing PES buyers, it is less feasible to conserve entire ecosystems (and their biodiversity values) without taking into account major restrictions on and modification of livelihood activities of nearby communities. Expecting PES schemes to transform ecosystem management and biodiversity conservation is unrealistic without a more comprehensive approach to sustainable development and landscape management. The limitation imposed on project funding for alternative livelihoods, a key issue at the project inception stage, did not fully recognize the integral aspect of livelihood alternatives for demonstration of PES schemes in biodiversity conservation.

- Where land use restrictions are imposed and support for alternative livelihoods is not available, some of the restricted practices move to adjacent areas. 'Leakage' into other areas was a key driver for expansion of the project sites. For example, in Arjo-Diga site, currently encompassing 10,800 ha, it is proposed that the entire watershed involving 20,000 ha is needed as the appropriate scale of conservation, over three times the original estimated protected area, in order to reduce the effects of leakage. During the TE field mission, the Kulfo project site agencies also highlighted the need for a wider catchment area approach (proposed for over 40,000 ha watershed scale).

- Where conservation activities occurred on community lands the project initiated various biodiversity and ecosystem conservation activities including a) designation of local protected areas managed by CBOs, b) soil and water conservation measures as prescribed by management plans for the project sites, c) livelihoods development related to apiculture, livestock development, etc. to provide alternatives to non-sustainable land use practices that degrade ecosystem and biodiversity values, and d) distribution of subsidized improved cook stoves to reduce deforestation pressures. Some of these conservation activities occurred under Output 2.1 linked to PES schemes but most were part of Output 2.2 aimed at strengthening local incentives for community

involvement in biodiversity conservation and protection or restoration of ecosystem services.[12]

- Where conservation activities were targeted on degraded 'private lands', CBO members undertook soil and water conservation interventions with the expectation of downstream benefits (reduced flooding, enhanced water supply) and, in some cases, expectations of future access to livestock fodder. It makes for an unusual 'PES scheme': the PES sellers and buyers may be the same – the landowner providing use of the land and the community providing conservation activities and both receiving benefits of restored landscapes. In these situations, there are also uncertainties about landowner obligations to maintain these improvements (e.g., forest/grassland cover) or, where they may exist, to respect the informal agreements between the parties about community access to fodder on the improved 'private lands'.

- The 'leakage issue' has also been prominent: displaced non-sustainable practices in the early stages reportedly moved to adjacent areas, causing the local authorities to expand the project areas, and aspire for even larger areas based on watershed drainage catchment area. This expansion of project areas placed pressures on management and implementation capacity.

With regard to integration of gender equality and human rights in the project design and strategy, the project document stated that particular attention should be paid to gender and representation of potentially less vocal groups throughout the process. There was limited direction on this in the project design but adjustments were made once the project commenced to enhance opportunities for participation of women, and CBO funding and processes were encouraged to place greater emphasis on the role of women in the project.

3.1.2 Indicators quality and utilization

The updated Results Framework (Annex 3) includes changes in Indicators based MTR recommendations. The project indicators and targets focused on:

- Improved recognition of biodiversity within CGRE strategy, including targets related budget coding for biodiversity expenditures, increased awareness of 70 decision makers, and increased budgetary support by 20%;
- Capacity of staff to use the decision support tools (maps and scorecards);
- At least 20,000 ha under improved stewardship in piloted PES schemes;
- Increased forest cover, reduced habitat loss/degradation;

[12] The program can be viewed as a form of 'reciprocal PES' that does not rely on extensive hydrological and economic studies to define the correct payment levels, emphasizes social norms and livelihoods compensation rather than financial incentives, and depends upon grassroots collaborative watershed management. See a similar approach - *Reciprocal Water Agreements*: http://www.naturabolivia.org/en/reciprocal-water-agreements.

- Institutional capacity to coordinate and manage PES programmes;
- Guidelines developed for ecosystem services valuation including indicators to evaluate biodiversity restoration status.

The outcome indicators are as follows:

Outcome 1:

(i) Improved recognition of conservation and sustainable use of biodiversity as a major contributor to the CGRE strategy of increasing GDP; and delivers a coherent response to biodiversity loss, and climate change.
(ii) Requisite staff capacitated and well positioned to use decision support tools and the results from BPER, and other relevant studies regularly in their decision-making.
(iii) Better cooperation and interaction of institutions involved in managing the response to biodiversity loss and climate change.

Outcome 2:

(i) Enhanced conservation security for the following threatened species …
(ii) Land use changes under PES, result in increased forest cover, reduced habitat loss and habitat degradation by 35%.
(iii) Institutional capacity of national and provincial governments (*woredas*) is emplaced to coordinate PES programmes, allowing for the systematic scale up of PES across the Afromontane forests (covering at least 20,000 hectares).
(iv) Increased government investment in pro-conservation PES in the Afromontane forests by EOP (MTR recommended revising indicator: 'Guidelines for ecosystem services valuation developed, including indicators to evaluate biodiversity restoration status').

A review of the M&E reports indicated that these indicators have been only partially used. The indicators above, in comparison to progress reporting data, show that the monitoring has been mostly based on outputs and that expected changes in CRGE strategy implementation, use of decision support tools, conservation status of key species and institutional capacity building other than training activity have not been directly measured in the M&E system. Like many GEF projects, there is a gap between planned indicators and actual reported indicator data at the outcome level. The MIBC design reflects the limited consideration in the inception stage given to defining the results chain and ensuring usable indicators.

Measuring project effects on CRGE strategy, changes in national budgeting practices for biodiversity conservation, awareness of decision makers and institutional capacities related to valuation of ecosystem services, and application of PES indicators have been difficult to implement. In particular, the Outcome 1 target of increased government spending on biodiversity (+20%) as a result of the Biodiversity Expenditures study and awareness-raising appears to have been overly ambitious. The

expected effects of the project on government budgeting for biodiversity conservation are not apparent, although some government staff suggest that it has had a positive effect on budgets.[13]

The current total area under project interventions is about 34,000 ha. Only a portion of the land improvements at this early stage have been the result of financed PES schemes (see Annex 6). Project achievements resulted from a wide set of CBO mobilizations and both PES and non-PES support. Under Outcome 2, the PES agreements are buyer-seller specific to the site situations and opportunities, and not based on systematic ecosystem services valuation but on willingness to pay and CBO willingness including local leadership persuasiveness with community non-CBO members to accept modifications in land use and livelihood practices. The project operations reflect a complex PES/non-PES set of incentives for biodiversity conservation, forest restoration and changes in livelihood activities (similar to other 'reciprocal PES schemes').

3.1.3 Assumptions, risks and lessons from other projects

The project strategy assumed that sellers and buyers of ecosystem services could be identified in a systematic land use and ecosystem valuation analysis (e.g., Output 2.1 – 'environmental service index' in the Project Document) when in fact it has been a much more opportunistic, contextual and partnership driven process. The chief assumptions and barriers that have posed difficulties have been the lack of PES policy and regulations, the apparent effect of pushing newly restricted practices to adjacent areas (leakage), and the limited support for transition toward viable, sustainable livelihood alternatives. Advocacy, negotiation processes and brokering mechanisms between willing partners have been key elements in results generated.

The assumption that the government would provide $1.6 M in cash co-financing, mainly for alternative livelihoods development, has not been realized, although for the past year UNDP has been trying to secure some of this funding through various sources.

A key assumption that the project would establish the legal framework in advance of the PES pilot projects was also not realized.[14] The related support expected for

[13] Although not quantified, EFCCC's Director for Plan & Budget Preparation and M&E Directorate and EBI Director General as well as Gamo Zone (Kulfo) and East Gojam Zone (Choke) officials have the opinion that budget allocation for biodiversity conservation has increased.

[14] The MIBC project contrasts to the model Humbo project which many CBO members visited. "The Humbo project expended great efforts to ensure the legality of the scheme – including particularly World Vision facilitated the granting of legally binding tree user rights by government at woreda level,

enhanced consideration of biodiversity in CRGE impact assessment processes is not apparent from the Outcome 1 results. The Biodiversity Expenditure study was expected to improve awareness of the role of biodiversity values in sector development practices, and eventually have budgetary effects, but again these aspects in the project strategy are not well defined.

Moderate risks highlighted in the Project Document did not include failure to adopt a legal framework although most other risks have not presented problems during implementation. The most important risk, as noted by stakeholders, has been the early opposition by some community land users toward restrictions on fuelwood cutting and livestock grazing in the newly established conservation zones. These have reportedly greatly diminished as community awareness and support have increased over time and where the results of closure have become visible. The risk is higher where the CBO membership includes only a portion of the project area households.

An additional risk is the capacity of newly formed CBOs to ensure effective, responsible management of the funds entrusted and membership decision-making processes. The CBOs have been legally established and conform to the government standards. There was no evidence of CBO management issues or constraints identified during the TE mission, although longer term monitoring by the government Cooperatives Office is required. Without additional funding, not all of the 43 CBOs may remain active.

The lessons from other projects emphasized the need for substantive community and government participation. Consultation and local ownership, along with PES partner involvement, have been prominent features of the project. Lessons about the legal basis for PES incentives, especially for prospective private sector partners, have also been recognized by project stakeholders who argue that this has been a constraint in expanding PES agreements.

3.1.4 Stakeholder participation

The project had extensive participation during the national inception workshop and similar local workshops at each site. The CBO weekly committee and monthly member meetings provide a structure for community input and discussion, and the Pilot Project Committees ensure coordination of government support for the project. The

which gave communities confidence that they would benefit from their efforts in restoring the forest. This will be a prerequisite for the GEF BD project." Revenues are generated by carbon credits. Project Document, 2015, p. 23.

estimated 2400 participants in workshop/training events (Annex 10) which covered 32 topics, and the involvement of over 8000 CBO members at the project sites (Table 4) also indicates a significant level of stakeholder participation.

3.1.5 Replication approach

The Project Document stated that "The PES model (Outcome 2) will be replicated throughout Ethiopia and could be adapted for use more widely across the region, which will enhance good on-the-ground biodiversity management practices that have been demonstrated elsewhere. The project will include sharing lessons learned, using a variety of media and study visits to enable other communities to learn from the experiences of the project."[15] The PES model has yet to be fully defined and established by the project although the current 15 PES agreements and the PES Guide provide a starting point to consolidate and replicate the field-tested approach. Legal framework enactment and additional reflection and refinement are needed to pursue scaling-up (see Section on Lessons Learned).

3.1.6 UNDP comparative advantage

UNDP Ethiopia has a long history of collaboration with the environment and natural resource agencies in the country and in procurement of international expertise. Project participants described the advantages of UNDP and GEF support in terms of mobilizing government and community interest in PES, increasing the national profile which gets the attention of government, exposure to international practices and proving training not otherwise available under regular government programs. UNDP has a long-term development assistance presence in the country and is able to link project activities with the policy level, although policy effects to date have been incremental, and any links to CRGE are ad hoc.

In order to generate significant impact from the introduction and initial piloting of the MIBC PES model (in the absence of a legal framework), UNDP needs to push for changes at the policy level. Without additional advocacy there is a risk of losing momentum and interest of the CRGE decision makers who are key to establishing the PES approach to community protected areas.

3.1.7 Linkages between project and other interventions within the sector

Table 1 below identifies projects which have complementarity with the MIBC project. There are few direct linkages to other projects, although MIBC participants visited the

[15] Project Document, 2015, p.

Humbo project site, GiZ project provided seedlings for one of the sites, and REDD+ has some follow-up collaboration at one other project site (Oromia).

Table 1: Related projects on land management and conservation in Ethiopia

Related projects	Dates/Sponsors	Major Objectives
CRGE Facility, *Output 4: Productive Lands Conserved and Degraded Lands Rehabilitated through Integrated NRM*	2014-2017 CRGE Facility donors - *Institutional Strengthening for the Forest Sector Development*	Rehabilitating degraded watershed through various activities. Communal community construction of pond, gabion check dam, hillside terracing, trenches, construction and stabilization of artificial waterways, construction and stabilization of cut-off drains and other watershed management. Post project focus group discussion with communities indicated that there has been an increase in ground water and vegetation cover in biophysical assessment of the watershed.[16]
REDD+ Partnership Agreement	2017-2020 Government of Norway; USD 80 million through (CRGE Facility), and USD20 million for other CSOs and international partners	Restoration in areas where forests have been lost – to reduce carbon emissions or increase removal. Reduce poverty, establish resilient livelihoods, conserve biodiversity and provide water. Equitable and sustainable low carbon development by enhancing countrywide and local institutions; providing incentives and information to create an enabling environment for the National Forest Sector Development program implementation; enhance forest carbon stocks through afforestation, reforestation and landscape greening. See Annex 11; the REDD+ programme is involved in the MIBC Oromia project site
CCA Growth: Implementing climate resilient and green economy plans in highland areas in Ethiopia	2017-2022 GEF/UNDP: USD 6,477,000 Govt Co-finance: USD 10, 250, 000	1) integrate climate change risk adaptation measures into federal, regional and Woreda-level development planning, budgeting and execution; 2) improve the availability of climate information products; 3) undertake climate-smart integrated watershed management for improved rainwater harvesting; 4) introduce climate-smart agricultural practices; and 5) diversify livelihoods.
Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia	2017-2022 GEF/UNDP: USD 10,739,450 Govt Co-finance: USD 144,965,431	Capacity to achieve food security with the need to restore and sustainably manage key environmental resources. 1) effective multi-stakeholder platforms are in place to support the dissemination and uptake of integrated approaches; 2) develop specific approaches and put in place effective mechanisms to scale up across target sites and, more widely, in the country; and 3) establish a systematic monitoring, assessment, learning, knowledge management mechanism that supports influencing at a wider scale in Ethiopia – and via Regional Hub project across SSA countries
Enhanced Management and	2017-2023 GEF/UNDP:	Build Ethiopia's capacity for biodiversity conservation through increased effectiveness of protected area

[16] CRGE Facility Consolidated Report, Reporting Period: July 2014 –March2017, March 2017, pp. 54-90

Enforcement of Ethiopia's Protected Area Estate	USD 7,494,495 Govt Co-finance: USD 83,211,481	management and implementation of measures to reduce Illegal Wildlife Trade (IWT) and poaching.
The Osyris Project, Harnessing the cosmetic potential of species of Osyris Santalaceae	Aditi international, a research lab, and Docomo oils plc, and the Ethiopian Biodiversity Institute	The Osyris project utilizes genetic resources from Osyris species (santalaceae), such as Osyris 22 uadripartite, known as the African sandalwood, for developing essential oil products based on light, middle and heavy fractions of osyris, used in the form of compounds in the cosmetic, perfumery and aromatic industries and as ingredients for the food and flavour industries.
Conservation of Biodiversity and Sustainable Use of Natural Resources	GiZ Biodiversity and Forestry Program (BFP) Euro 16, 500 000	Objective: Ethiopia has a consolidated system available to conserve their biodiversity and to implement protection measures and measures to sustainable use the biodiversity effectively.
Support to management structures for the Sheka and Yayu Biosphere Reserves	2015-2019 GIZ Biodiversity and Forestry Program (BFP), UNIQUE/NABU Consortium	Support to the SNNPRS Environmental Protection and Forest Authority (EPFA) and the Oromia Environmental Protection, Forest and Climate Change Authority (OEFCCA) in piloting new innovative management structures for the Sheka and Yayu Biosphere Reserves.
EnDev Ethiopia	2005-2020 EU and Others € 34,068,000	EnDev Ethiopia promotes and finances the hardware and installation of PV systems at rural health centres. It also supports the dissemination of improved cookstoves (ICS) to reduce fuel consumption by raising awareness and establishing a network of stove producers.
Ethiopia Climate Action Through Landscape Management (CALM) The World Bank	2019-2028 US$500 million from IDA, The World Bank	Support for the Ethiopia Strategic Investment Framework (ESIF) to address land degradation, enhance rural livelihoods and deliver substantial climate co-benefits through Watershed User Associations. In total, 10,000 micro watersheds are proposed to be implemented over a 10-year period covering 5 million ha.

3.1.8 Management arrangements

The project is managed according to UNDP NEX procedures under the responsibility of EFCCC (formerly Ministry of Environment and Forests). A five-level management structure has been used:

- Project Steering Committee (10 members)
- Project Management Unit (PMU with 3 staff)
- Pilot Site Committees (zonal/regional/woreda government inter-agency committee)
- CBO Executive and Committees (responsible for Community Protected Areas)

The general impression from the TE mission is that these arrangements have been well-defined and effective. PSC meetings occurred at Inception and then four time (March 2017, July 2018, November 2018 and January 2019). Progress and key issues

were reviewed at the meetings. Communications between agencies are well managed although ability to influence government policies appear to be limited.

3.2 Project Implementation

3.2.1 Adaptive management

'Adaptive management' is the ability to adjust to unexpected or changing project circumstances. Unexpected issues included the slow progress on the legal framework and the lack of direct government co-financing of livelihoods development. The project management addressed these by undertaking various awareness-raising and advocacy activities and UNDP efforts to mobilize added funding for livelihoods. Despite efforts by the project, the ability of the project to influence government policy and project co-financing has been limited.

Within the project design, the migration of restricted activities beyond the project site boundaries (leakage) led to greatly increasing the community protected areas. The project also promoted some women-only CBOs in response to a gender action plan recommended in the MTR. The project has clearly tried to develop alternative livelihoods as part of the conservation program in order to adapt to local realities.

3.2.2 Financial planning and co-financing

The Project Document stated: **"**The Government of Ethiopia has confirmed co-financing for the project at $15,800,000. This will come from the CRGE Facility, Federal and Regional Budgets. The amount from the national and regional budgets will be both in cash and in kind. UNDP will contribute US$ 200,000 from the UNDP Country programme."[17] It was planned in the Project Document that 0.8 M USD would be provided by government in each the final two years but this did not occur.

As shown on Tables 2 and 3, the project has spent 3,239,145 USD, or 63% of the original planned budget of 5,116,453 USD cash financing, and 88.8 % of the actual available funds provided by GEF and UNDP. The planned budget was increased to 5,248,359 USD due to added funding (133,000 USD) from UNDP. The current expenditures amount to 61.7% of the total planned cash funding. However, the Actual Budget is 3,648,360 USD (due to the cash co-financing from GoE not forthcoming), and all but 11.2% of these funds were spent to the end of June 2019. The remaining funds of 409,215 USD were available as of 30th June.

[17] Project Document, 2015, p.

Table 2: Project Annual Budgets and Expenditures

	2016		2017		2018		June 2019		Total to June 2019
Component	**Budget**	**Expend**	**Budget**	**Expend**	**Budget**	**Expend**	**Budget**	**Expend**	**(% of GEF/UNDP funds)**
Outcome 1	101,000	101,000	450,000	444,000	203,534	203,534	264,000	159,677	**908,211 (25%)**
Outcome 2	360,500	444,500	743,000	769,698	532,400	668,233	533,719	280,000	**2,162,431 (59%)**
Project Mgt	43,200	43,200	43,200	37,700	64,500	64,500	64,500	23,103	**168,503 (4.6%)**
Total	504,700	588,700 (117 %)	1,236,200	1,251,398 (101%)	800,434	936,267 (117%)	862,219	462,780 (54%)	**3,239,145 (88.8%)**

Total original budget = 5,116,453 USD; Total updated budget = 5,248,359 USD due to added UNDP funding; current expenditure is **61.7%** of revised budget. Total funds available however are $3,648,360, 88.8% of which have been expended to June 30, 2019.

Note: Payments contributed for communities' livelihood support at the grass root level are not included in this table.

Table 3: Project Financing and co-financing status (USD)

Project financing	Project Document 2015	At Midterm Review June 2018	Terminal Evaluation August 2019	%	Financing leveraged
Cash grant					Investment mobilized:
GEF:	3,316,453	2,124,550	2,907,238.68	87.66	Est. PES revenue: $244,000 USD
UNDP:	200,000	82,000	331,906.56	166.0	$ 133,000 USD
Govt:	1,600,000	0	0	0	0
Sub-Total	**5,116,453 (planned)**	**2,206,550**	**3,239,145.24**	**63.31**	**$ 377,000 USD**
GEF/UNDP funds – actual	**3,648,360 (actual)**		**Remainder: 409,215**	**88.8**	
In-kind					
Govt:	14,200,000	7,000,000	13,000,000 est.	92.9	Recurrent expenditures
UNDP in-kind	-	-	-		Recurrent expenditures
Sub-Total	14,200,000	7,000,000	13,000,000 est.	92.9	Other minor contributions
TOTAL	**19,316,453**	**9,206,550**	**16,239,145**	**84.1**	

Sources: Project Document, MTR Report, Project PMU

Leveraged investment has mobilized $377,000 USD in cash contributions, recurrent expenditures from various government agencies and some in-kind contributions from GiZ (tree seedlings) and private sector partners. The additional UNDP funding was used mostly to fund livelihood development activities which were not given sufficient budget in the GEF grant.

The expenditure data show 17% overruns for 2016 and 2018, very low costs for Project Management (5.2%) and a disbursement rate in line with the available funds of 3,648,360 USD, with 11.2% remaining for the final six months of the project. There may be some added external funding generated by UNDP in the final stages of the project but this has yet to be determined.

The expected in-kind co-financing from Government of Ethiopia was originally estimated at $14 M USD, half of which was contributed as reported in the MTR, and another $6 M USD estimated in-kind is assumed to have been provided by June 2019 for a total $13 M USD in-kind contribution. There was no detailed disaggregation of the planned $14 M government co-financing contributions in the Project Document, nor were there means to track such contributions, and therefore no way to determine the precise in-kind contributions from government at national and subnational levels.

3.2.3 Monitoring and evaluation

The project has met the basic progress reporting requirements of GEF and UNDP. However, there were practical data collection constraints in utilizing some of the indicators originally proposed and later updated in the MTR (see Section 3.1.2 above). The Project Document stated that METT would be used to measure impacts[18] but this GEF tool was not adopted in the Results Framework (although some form of it would have been useful for tracking CBO capacity development). Expected annual field visit reports from UNDP-GEF RTA planned in the project document were not available. Assessment of specific progress on the legal framework has been difficult to gauge due to the uncertainties about policy level decisions. Constraints on progress appear to be bureaucratic and/or political. The current state of progress through the policy and regulatory development process is difficult to determine.

The M&E design lacked a coherent 'theory of change' and results chain (biodiversity safeguards > CRGE integration > PES strategy/regulatory framework > PES piloting and scale-up). The Project Document deferred details of the M&E Plan to the inception stage but other than the Results Framework, no specific M&E Plan was prepared. An

[18] Project Document, 2015, p. 52

indicative budget of $187,000 USD was proposed but may not have been fully allocated. As a result, the project indicators do not provide very precise measurement of outcome progress (See Section 3.1.2). The MTR conclusions and a brief review of the outcome indicators in relation to monitoring reports suggests some lack of attention at project inception to indicator functionality as summarized previously. Output completion has nevertheless been diligently tracked and recorded in quarterly and annual reports. Assessment of the ecosystem services protected/enhanced and funded by PES 'buyers' has been mostly qualitative and anecdotal.

3.2.4 Partnerships and execution and implementation modalities

EFCCC and the PMU have effectively mobilized subnational environment and other line agencies to implement project activities at the four pilot project sites, although the implementation modalities were less effective at the policy development level. The implementation partnerships with local authorities under the auspices of EFCCC– two at the zonal level (Kulfo, Choke), one a regional level (Hadew) and one at woreda level (Argo-Digga) have been key factors for effective delivery of support to the CBOs. They have provided the technical backstopping from line agency experts to organize the communities, designated the protected areas, formulate management plans, to train CBO members and to oversee completion of the project field work. Engagement of decentralized government institutions and their in-kind contributions alongside PES funding sources for support to legally established CBO cooperatives is critical to sustaining and replicating the project model. The local Environmental Protection, Forests and Climate Change offices have led the pilot project implementation with direct support from the Cooperatives offices in organizing CBOs and management direction from the PMU.

Table 4 summarizes the pilot project CBOs to date. There are 43 CBOs with total membership of 8243, 30% of whom are women. The area covered by the community protected areas is almost 34,000 ha, well beyond the original target of 20,000 ha.

Table 4: CBOs Status, August 2019

Project sites	Legalized number of CBOs	Area of land covered by CBOs	CBOs member composition		
			Male	Female	Sum
Hadaw MIBC Project site	7	1,500	1,086	286	1,372
Arjo-Diga MIBC Project site	9	12,000	1,091	312	1,403
Kulfo MIBC Project site	13	7,506	249	137	386
Choke MIBC Project site	14	12,992	3,370	1,712	5,082
Grand Total	**43**	**33,998**	**5,796**	**2,447**	**8,243**

Source: 2018 Annual Report & Project Site Presentations (July 2019)

Based on the short field visits, there appears to be substantial recognition of the importance of local capacity, ownership and responsibility for the protected areas, and also, that this community-based approach is different from the standard government project. The project is distinguished by local authorities directly mobilizing communities (without the aid of NGOs) under the lead of a designated site officer from the local EFCCC office (trained by the project), with funding and supervision from a national level office (the PMU/Project Steering Committee), and local oversight and assistance by inter-agency steering committees. This effective field implementation and management set-up may have lessons for other projects.

The profile of and funding from the GEF/UNDP project may have given added impetus for government support to the pilot projects. Once the project ends, sustaining the partnerships may be more difficult unless linkages with CRGE Tasks Forces or other formal government coordination and funding mechanisms are established.

3.2.5 Management by the UNDP Country Office

The GEF requirements for project design, administration and reporting have been met by the project. The PMU, with only few staff, have effectively established good relations with local partners and managed a significant workload spread across four sites. The project partners expressed their appreciation of UNDP and PMU support. The project design however imposed high unrealistic expectations for policy and legal developments in the short term (See Section 3.1.1). EFCCC and UNDP have not had the ability to get the government to meet these expectations. The constraints on Outcome 1 progress and urgency for action highlighted in the MTR were not adequately taken into account by the steering committee and the risk management strategy. Only now in the last few months of the project is the legal and CRGE policy gap being pursued. More direct advocacy and the use of international PES advisors could possibly have provided some additional benefits to accelerate progress. Technical advisors from GEF/UNDP have not been actively involved (based on the available documents) although expectations for their involvement are uncertain.

Timeliness of budget flows to project partners appears to have been adequate based on the field interviews and review of progress reports. The latest financial audit (2018) also concluded that “there were no internal control weaknesses for the year ended

Dec 31, 2017" and that "the work plans, financial reports and execution of direct payments are timely and in compliance with project documents."[19]

3.2.6 Coordination and operational issues

No significant coordination or operational issues were identified. Participants were satisfied with field level CBO operational communications (Annex 11). The predominant design issue appears to have been formalizing coordination with CRGE operations and generating support for further development of the MIBC PES model as an integral part of the biodiversity conservation and land rehabilitation programs in the country. CRGE Facility has funded similar projects, mostly notably 'Institutional Strengthening for Forest Development Project'[20] and UNDP is a direct implementing partner.[21] The potential for collaboration has not been directly explored to date. Stakeholders are requesting some kind of direct, working relationship between the CRGE program and the proposed MIBC initiated *Local PES Fund Platform*.

3.3 Project Results

3.3.1 Project objective and overall results

The project was designed to better protect biodiversity from current and future threats by ensuring development decisions do not impact negatively on biodiversity. The implementation focus, however, has been oriented to developing and proving how biodiversity linked to ecosystem processes can be supported through PES arrangements to respond to threats from rural land use practices – deforestation, overgrazing, hunting, etc.

The primary achievement of the project has been the ability to establish effective partnerships between communities, local and regional/zonal authorities, universities and private firms in collaborating to address flooding, water management and biodiversity conservation issues on degraded lands, and to generate cash and in-kind support for these efforts. The pilot project experience highlights key ingredients to facilitate a shift toward sustainable land and ecosystem management - coordination and cooperation within and between CBOs, government and universities, and

[19] Solomon Shewaye Chartered Certified Accountant (UK) and Authorized Auditor (ETH), Auditors Review and Comments on Updated Action Plans for the Prior Year Audit Observations and Recommendations, 2018.
[20] EFCCC, Annual Narrative Progress Report, Institutional Strengthening for the Forest Sector Development in Ethiopia, Reporting Period: Jan-Dec 2018, May 2019.
[21] See for example - http://www.mofed.gov.et/web/guest/partners: "UNDP is partnering with MOFEC / CRGE Facility and MEFCC in support of CRGE implementation.

mobilisation of community support. The incentives for integrating biodiversity into land use practices have been introduced through the pilot projects. The engagements of CRGE Task Forces in assisting PES agreements and further implementation of the *Local PES Fund Platform* remains a key challenge for the project.

Table 5 summarizes MTR and TE comments on the progress to date. The comments can be read in conjunction with the PMU's statements of achievement presented in Annex 3. These statements suggest a positive effect of the Biodiversity Public Expenditure Review on increased allocation of budgets for biodiversity conservation, but the TE has not been able to corroborate this view. Certainly, awareness has been raised through these studies and efforts made to adjust the CRGE monitoring framework, but substantive changes in national funding for biodiversity conservation is not evident from the available data.

Table 5: General progress relative to the MIBC Results Framework

Component	MTR comments	TE Comments
Project strategy	The project does not provide enough support to build sustainable, climate-resilient livelihoods for the communities in the project sites. PES is a completely new approach in Ethiopia. Therefore, the design and implementation of the PES system should happen as early as possible to ensure demonstration of the economic and environmental benefits, and to provide local communities with alternative source of income	The original plan was to develop the legal framework and then pilot PES schemes at each site in collaboration with CBOs, with livelihood development support from GoE. This has not occurred as planned. Nevertheless, CBOs appear to be well established, community based protected areas have been designated and significant protection and rehabilitation activities for ecosystems services at project sites are well underway.
Project objective: To ensure that the biodiversity of Ethiopia is better protected from current and future threats by ensuring development and investment decisions do not impact	PES is not fully implemented as no legal framework was adopted yet. As a result, only volunteer – not mandatory – PES agreements have been signed between CBOs and public/private buyers. Several of these buyers have requested the adoption by the GoE of an operational framework to support legal PES transactions. The GoE's commitment to provide USD 1.6 million towards	Status similar to the MTR. Legal framework finalization expected 'sometime soon'. The integration of biodiversity conservation into CRGE strategy and operations for example through formal adoption of the PES Strategy and Roadmap, or through a shift in CRGE direct engagement in funding biodiversity conservation is a process still underway. Biodiversity safeguards within development sectors have focussed on inclusion of

negatively on biodiversity	PES scheme has not been concretised yet.	biodiversity indicators in the forest sector section of the M&E framework. The primary result has been awareness raising about biodiversity values and the opportunities of funding through PES schemes.
Outcome 1: The enabling framework for mainstreaming incentives for biodiversity conservation into the CRGE strengthened	The review team noted that the regional digital maps produced by the project do not include relevant data allowing to demonstrate the project's impacts on biodiversity conservation areas (because of the time series used to produce the maps); the reviewers have advised to add relevant data, and the project team is acting upon this recommendation. Access to the project's knowledge products and decision support tools can be improved, as there is currently communication outlets (e.g. website) for compiling and sharing them.	Decision support tools have assisted scoping of PES opportunities: BD Scorecards to rate PA status, digital GIS maps to identify key features and management zones, and priority setting processes. Valuation guidelines prepared and PES Strategy established; staff trained (Annex 10). The monitoring system for assessing ecosystem service improvements is mostly qualitative. Integration of biodiversity into CRGE focussed on adding indicators to the M&S system but effect on decision making is questionable. Incentives for biodiversity conservation in CRGE programs may be very marginal given the small status of EFCCC within government and CRGE decisions.
Outcome 2: Payments for Ecosystem services (including biodiversity conservation) is piloted at selected sites	The GoE's commitment to provide USD 1.6 million as co-finance to the PES scheme has not been concretised yet; this co-finance is critical to enable the implementation of PES.	There are 15 PES agreements established so far even without the legal framework in place, some of which a very informal arrangements for contributions in support of land rehabilitation and livelihoods development. Good physical improvements are evident on the ground.
Project implementation and adaptive management	The national legal framework which development was supported by the project has not been adopted yet, by the GOE, therefore, site specific PES systems are not yet operational.	15 PES agreements underway; uncertain but pending progress on policy (mainstreaming biodiversity in CRGE decision making and legal development.
Sustainability	The project's livelihood component is weak. There is limited support available for the promotion of alternative, sustainable livelihoods. Yet, a siloed approach to BD	The CBOs visited appeared to be committed and well organised. The project livelihoods development has been dependent on project funding rather than PES or govt sources,

	conservation is not sustainable, it needs to be combined with support to sustainable livelihood options to deliver satisfactory long-term results	so sustaining the CPAs and alternative livelihoods progress presents some risks and uncertainties. Not all of the 43 CBOs may survive without further support.

3.3.2 Relevance

The project is highly relevant due to the significant pressures on biodiversity. The project justification in the project document stated the "Conversion of forests, woodland and shrub land into agricultural land is by far the largest driver of habitat loss resulting in loss of biodiversity and associated ecosystem services. Some studies show that 80% of new agricultural land developed between 2000 and 2008 was converted from forests, woodlands or shrub lands. Conversion of forest to pastureland is the second biggest driver of habitat loss, followed by extraction of wood for fuel and construction as the third main driver."[22] The Biodiversity Scorecard for the project sites indicated that three of the sites have had over 15% habitat loss or over 0.5% habitat loss per year, and one (Arjo-Diga) with 5.1 % loss between 1986 - 2016/17.[23] The project has been directly addressing these pressures at the four sites.

Project relevance for and alignment with country, UNDP and GEF strategies is as follows:

- Ethiopia's CRGE Strategy – the project supports CRGE objectives on i) fostering economic development ii) limiting GHG emissions; and iii) improving the country's resilience to climate change.

- UNDP Ethiopia Country Programme Action Plan – The project is part of the Climate Change and Environmental Vulnerability pillar which is aligned with Ethiopia's Growth and Transformation Plan and also linked to SDG targets related to Climate Change and Resilience-building under the CRGE Strategy, and with Ethiopia's NBSAP.

- GEF Biodiversity – The project is directly relevant to GEF Biodiversity Focal Area Strategy objective 1 – "mainstreaming biodiversity across sectors as well as landscapes and seascapes", and objective 2 – "addressing direct drivers to protect habitats and species" (GEF-7 Programming Directives).

[22] Tadesse Woldemariam Gole, Report to undertake a biodiversity score card, December 2017, p. 6
[23] Ibid., 2017, p. 25.

3.3.3 Effectiveness - Achievement of Outcome 1: Enabling framework

Annex 3 describes the mainstreaming of biodiversity conservation at the local level and suggests similar results at a national level may take longer. Since last year, EFCCC has been reviewing proposed ecosystem service payment legislation. An expert is to be contracted to draft the legislation within one month, and adoption of the legislation is expected to be finalized before the end of the MIBC project period.[24] However, no draft PES policy, decree or regulation are yet available.

The national budget allocation for biodiversity conservation work was estimated by stakeholders to have increased (10-22% since 2016 – Annex 3) but this is not verified. The *Biodiversity Conservation Public Expenditure Study* completed by the project indicated that the biodiversity sub-sectors are far behind the priorities set for natural resources management, and that there is a lack of institutional and systemic capacity to coordinate the conservation and management of biodiversity resources.[25] It also noted that the actual budget allocations for EBDI and EWCA, the lead agencies for conservation, were respectively 58% and 84% of the funding amounts requested by the agencies. The study recommended enhancing awareness, coordination and sub-national presence of the agencies, and increased evidence-based advocacy on the significant contribution of biodiversity conservation to national GDP.

Biodiversity conservation in CRGE is assumed to occur through watershed rehabilitation and improved vegetation cover rather than targeted conservation objectives. Policy change for specific biodiversity safeguards, national budget tagging for biodiversity or financial incentives through PES has not occurred as planned (see Project Document and Section 2.5 above) although awareness has been raised, decision support tools have been introduced and government staff have been trained.

Three decision support tools were developed and applied: Biodiversity Scorecards, Digital Mapping and Priority Setting for mitigation measures. The biodiversity scorecards assisted in developing core buffer and transition zones. The 8 digital maps that were produced led to three of them being adopted and another one in process (Annex 3). Training was provided to 54 government staff on use of the decision support tools and 197 staff got training in PES schemes. A wide range of applied PES-related consultation and training was provided at community, regional and national level events for about 2400 participants, 13.5% of whom were female (Annex 10).

[24] Dr. Ayele, Director General, Laws and Standards, D/G of EFCCC, email of 20-8-2019
[25] Johse Baneboka, Public Biodiversity Expenditure Review of Ethiopia, (2001-2015), Sept. 2017, p.58.

A significant achievement in recent years was to establish the National Biodiversity Council, and to set up similar coordination mechanisms at the subnational administrative level. The CRGE Task Forces have assisted in promoting multi-agency support for the project pilot project activities. Separate from the project activities, the CRGE Monitoring and Evaluation (M&E) System was revised in early 2018 to include new biodiversity indicators based on suggestions from MEFCC; for example: *'Percent tree cover in high forest', 'Tree density/stock in scrubland', 'Tree density/stock in grassland cover areas ', 'Tree density/stock in agricultural land use', etc.*[26] The M&E system contains 52 biodiversity indicators, many of them linked to NBSAP. The breadth of these indicators may not be a strategic or practical use of the M&E system for measuring high level biodiversity trends given the implementation costs and data complexity involved in this long list; the actual application, reporting and use of these 52 indicators is not known.

Ecosystem valuation studies show high variation in estimates. The Choke site ecosystem services, for example, were valued at over $4 Billion USD/yr, two-thirds of which (2.53 B) was attributed to carbon sequestration.[27] The estimated 1.5 Billion USD/yr value for non-carbon ecosystem values at Choke site alone contrasts sharply with estimates for the entire protected area system in Ethiopia (completed by a separate consultant) at 325 Million USD/yr excluding soil carbon.[28] Studies by the MERC project provided an estimate of 200 Billion USD/yr from Ethiopia's ecosystem services.[29] Clearly, these values are sensitive to different assumptions in the analyses.

The usefulness of ecosystem services valuation is in the contribution to awareness of ecological values but hypothetical valuation estimates have few reference points. The economic analysis might be better targeted on estimating the requirements for ecosystem protection, rehabilitation or enhancement in order the meet some specified sustainability objectives or end results that governments and communities agree upon, and the options and costs of achieving such desired results.

3.3.4 Effectiveness - Achievement of Outcome 2: PES Piloting

The pilot projects have established 43 CBOs involving 8,243 households who have been engaged in protecting and conserving almost 34,000 ha of land (Table 4). The

[26] Environment and Climate Research Center, Ethiopian Development Research Institute, Indicator Assessment Report as an Input for the CRGE Monitoring and Evaluation (M&E) System, Jan. 2018, p. 12.
[27] Solomon Berham, slide presentation: Performance Report on Choke Pilot Site, August 2019.
[28] Dr. Hugo von Zyl, The Economic Value and Potential of Protected Areas in Ethiopia, Sept. 2015.
[29] PES Strategic Plan, Studies and Surveys on Opportunities and Challenges to implement Payment for Ecosystem Services in Ethiopia, 2018, p. 51.

project staff estimate that more than 75% of the land users in the project areas are now aware of the benefits of biodiversity conservation and ecosystem services, and 50% of them have benefited from the project (Annex 3). The awareness of policy makers and local community has positively improved on biodiversity conservation at national, regional, and local levels. Reports of participatory field observation by project key stakeholders and M & E reports indicate that habitat loss and land degradation is reduced by more than 50% in Diga project site, >40% in Hadew project site, > 35% in Kulfo project site and by 20% in Choke.

Overall, soil and water conservation, afforestation, livestock developments, distribution of improved cookstoves and solar lighting and the cut and carry fodder collection and hunting restrictions have made a significant difference. The results were visible at the specific project sites visited where recovery of ecosystems appears to be underway after only a few years of intervention and with the benefit of good rainfall. The Choke site is particularly noteworthy for the level of effort at implementing a large community-based management system important in Amhara regional state and with reported good prospects for private sector PES agreements. The Kulfo site effort to significantly contribute to flood mitigation and increased water availability for Arba Minch Municipality also highlights the economic rationale for PES investments.

Further watershed management and rehabilitation work are required along with diversification of alternative livelihoods. An estimated 75-80% of the project activities have been funded by GEF/UNDP support while the remainder has been generated from other sources, including PES agreements (Annex 8). Generating additional funds is planned but this may require some bridge financing before the PES opportunities are fully developed.[30]

The PES Strategic Plan defines PES as "*a transaction, based on a legal document, where one or more providers sell one or more well-defined Ecosystem Services to one or more beneficiaries, for a well-defined period of time."* The requirements for PES have been described as:

1. a voluntary transaction where
2. a well-defined ecosystem service (or a land use likely to secure that service)
3. is "bought" by a (minimum of one) ecosystem service buyer

[30] E.g., In the CRGE Forest Sector project three forest user groups under community forestry scheme earned 20,000 Birr each, mostly from selling grass from the plantation sites and from selling seedlings; beneficiaries who received chicken earned an average of 400-600 ETB birr per month per household., The Institutional Strengthening for the Forest Sector Development Program in Ethiopia (ETH-13/0021 and Addendum No.1), June, 2018, p. 20

4. from a (minimum of one) ecosystem service provider; if and only if
5. the service provider secures ecosystem service provision (conditionality).[31]

These are the stated requirements. However, there is considerable flexibility in how strict these requirements are applied internationally. For example, 'reciprocal agreements' have been considered a practical, informal and voluntary form of PES, which is also reflected in the current MIBC examples.[32] Discussions with project stakeholders indicated that the absence of a legal framework is a major barrier to fully demonstrating PES potential.

Annex 8 summarizes the current 15 PES agreements. The predominant outputs provide for tree seedlings (nursery support), tree planting, agricultural inputs, energy saving devices and research and training programs. They include a combination of cash and in-kind contributions. The only specific outcome-based ecosystem service agreement is with the Arba-Minch local authorities where the agreement specifies "restore degraded areas to the point it can significantly contribute to flood mitigation and increased water availability". The Annex shows that at least 7 Million ETB (244,655 USD) have been generated so far covering periods up to 5 years, excluding the important non-valued in-kind contributions. The annual PES contributions that have been secured are about $1.8 Million ETB per yr (62,000 USD/yr) on 3-5-year contracts while one-time contributions are about 470,000 ETB ($16,200 USD).[33]

The promotion of alternative livelihoods has been a key element of the pilot projects. The activities have focussed on animal fattening (stall feeding cattle), livestock development (poultry, goats), beekeeping, grain milling, small trades (Annex 9 and 11). Adverse impacts have also been observed at a few project sites where enhanced habitat has resulted in conflict between wildlife and farmers. Some wildlife species were found attacking sheep and goats and crops as well. As ecosystems mature, other prey may be available to reduce predation on livestock, but these issues are still a concern to some local farmers and will need ongoing support from CBOs where they occur.

[31] Fripp E., *Payments for Ecosystem Services (PES): A practical guide to assessing the feasibility of PES projects.* Bogor, Indonesia: CIFOR, 2014, p. 2.
[32] The defining characteristics of the MIBC model are aligned with some other international experiences; see, K. Whittaker, E.K. Kovacs, B. Vira, *Reciprocal Commitments for Addressing Forest-Water Relationships*, in Ecosystem Services and Poverty Alleviation, Trade-offs and Governance, Routledge, 2018, pp 126-141.
[33] See details in Annex 8

Local participants and project staff have noted the limited scale and type of alternative livelihoods. For example, at the Choke project site, it was suggested that additional livelihood options could be considered such as:

- Support livestock feed to the farmers temporarily (until the conserved sites generate and provide enough feed to their livestock)
- highland fruit development such as apple, peach, etc.
- build micro-level poultry feed processing plants
- invite or establish bottling companies to pack and distribute Choke highland water to create job opportunity to youth
- create market linkage to produced eggs[34]

3.3.5 Efficiency and cost-effectiveness

In spite of a slow start, the project has been implemented in a timely manner with the exception of the legal framework which is still pending. Scale of outputs relative to costs have been reasonable especially under Outcome 2 where voluntary community contributions have played an important role. Over 34,000 ha of protected area, 70% above the original target, are now under some level of community management to limit unsustainable practices. The project has leveraged significant public and private sector in-kind and PES financial support for effective implementation of the pilot projects at an initial proof of concept stage, although substantial opportunities remain to generate further PES agreements.

The key efficiency issue has been the failure to date, despite advocacy activities, to establish the necessary policy, institutional and legal framework to support and guide the further development and implementation of the PES approach to biodiversity conservation. Assurances have been made regarding progress on this issue in the short term. Overall, however, project resources have been used efficiently and the financial audit did not identify any significant issues. Table 2 summarizes annual expenditures relative to budgets which were reasonably in line with planned activities.

3.3.6 Sustainability of project results

The main features in support of sustainability are (i) the creation of legally-established CBOs (cooperatives) with direct responsibilities for CPAs, authorised by EFCCC, and with links to local authorities and line agencies technical experts, and (ii) further expansion of financial and in-kind support from PES agreements, pending the legal framework. With regard to the latter, only about one-fifth of the costs so far have

[34] Solomon Berham, Performance Report on Choke Pilot Site, July 2019.

been provided by these agreements, although ongoing annual costs may be lower. Establishing the legal framework will greatly enhance PES financing and project sustainability. As noted in the project site visits and CBO survey (Annex 6 and 11), further community awareness-raising and expansion of alternative livelihoods are needed to ensure local support for protected areas restrictions and the measures needed to assist regeneration and recovery and sustainable utilization (alternative livelihoods) of these areas. This awareness-raising will be assisted by the ongoing presence of the CBOs and support of government staff.

The strong community organisation and the initial results from project activities along with formal adoption of management plans provide some optimism for sustainability especially where the protected areas have become well recognized. There was a broad expression of support to sustain the project activities by local authorities and regional/zonal/woreda committees, and to implement the management plans with local funding. The likelihood of significant government financial support however, given limited budgets and neglect of land management in the past, is questionable. The primary stakeholder view was that formal commitment by the CRGE Committees is necessary along with PES legal framework if sustainable livelihoods are to be expanded. However, even without such support, the CBOs now have enough awareness, experience, income generation success and resources from regeneration of vegetation and water sources to provide some basis for maintaining the community commitment.

Further sustainability risks in terms of financial, socioeconomic, institutional framework and governance, and environmental risks are presented in Table 6. As noted in this report, changes to CRGE funding policy and establishing the PES legal framework are the main actions needed to support financial and institutional sustainability. There is significant local stakeholder support for the project which adds to sustainability potential but the national level support remains a key challenge for a small agency such as EFCCC, especially given the national priorities on security and political stability.

Despite the general optimism about local sustainability, there is some risk that momentum toward full achievement of the project objective and establishment of the PES model may be constrained by the slow progress in getting government to revise policies and regulations. This has been a more complicated and time-consuming task then originally envisioned, and because EFCCC is a junior authority within government, the potential for completion of all outputs by the end of 2019 may be questioned unless concerted action is taken to finalize the planned Outcome 1 outputs.

3.3.7 Country ownership, mainstreaming and capacity development

There is currently a high level of government and community ownership in the project activities. The PES approach has attracted significant interest at the working level and there are high expectations for future expansion of the approach if the legal constraints can be resolved. Awareness-raising and orientation training have been completed but more targeted institutional capacity building of the PES concept is in order to fully establish the approach.

PES is still viewed as any kind of voluntary agreement on any useful contributions to conservation (e.g, distribution of molasses byproduct from sugarcane processing used in animal fattening) rather than a structured financial support from resource users for measurable ecosystem services. Further refinement of the PES concept is warranted (see Recommendation 2).

Mainstreaming of other UNDP priorities on gender and women's empowerment, poverty alleviation, capacity development, improved governance, prevention and recovery from natural disasters, etc., has not been an explicit focus of the project, nor expected within the Results Framework although livelihoods development is linked to poverty reduction. Institutional capacity development has commenced with training and technical guidance on PES, but further development to institutionalize the PES system is recommended in this report. The gender equity actions have included, post-MTR, an emphasis on livelihoods development activities oriented to women and the creation of a few women-only CBOs.

3.3.8 Catalytic effect and impacts

The MIBC project has established an initial, proven working model for community protected area management and rehabilitation that can be replicated in other areas. The project sites provide a foundation for further demonstration of local approaches. As a result of the project interventions, initial positive impacts have been observed at project sites which include: improvement of ecological services such as increased water discharge and return of disappeared wildlife, increased productivity of land located downstream to structures put in place, reduced pressure from human-animals to protected /enclosed areas, avoided or reduced hazards of flooding, etc.

The demonstration effects at the field level have been generally good. On the other hand, at a national level, the project has yet to have a systemic policy impact on biodiversity conservation as envisioned in the project design. The MIBC PES model has

been initiated but it remains a productive and worthwhile work in progress that requires further policy development before efforts at scaling up are pursued.[35]

4. Rating of Project Performance

Table 6: Project Rating

Criteria	Rating	Reasons for rating
Relevance	**R**	The extensive watershed degradation pressures and biodiversity decline in the project areas and the lack of sustainable land use practices which have contributed to this decline, make the project interventions highly relevant. The PES method offers an important option for addressing the pressing land management and biodiversity conservation issues.
IA and EA Project Execution	**HS**	The cooperative relations between CBOs, local authorities and universities is a key strength of the MIBC approach. EFCCC have provided pro-active and timely implementation through dedicated field coordinators and PMU staff to mobilize community involvement and government support. The PMU and UNDP have provided the necessary management guidance and communications amongst stakeholders at the national and sub-national levels.
Monitoring and Evaluation	**S**	The project indicators for Biodiversity Safeguards (Objective), the Enabling Framework (Outcome 1) and Pilot Projects (Outcome 2), presented in Annex 3, were not fully operational and also needed mid-term revisions. Overall M&E reporting is satisfactory within the GEF/UNDP reporting standards although the effects on national and subnational conservation budgets, and on biophysical change are monitored from a qualitative rather than quantitative perspective. The type, scale and measurement of ecosystem services being addressed under the PES agreements are only generally defined, which limits the accountability aspects for buyers and sellers. M&E Design rating comments: a lack of coherent and well-communicated theory of change and results chain placed constraints on the M&E system to accurately and

[35] A similar project under CRGE noted: "If the Programme is to scale up effectively and provide further opportunities for farmers, strengthening market linkages and establishing incentive mechanisms to encourage the private sector will very soon be needed. Local level staff at woreda level will need salary remunerations and additional training in business management and marketing aspects as well as in direct forestry skills.", The Institutional Strengthening for the Forest Sector Development Program in Ethiopia (ETH-13/0021 and Addendum No.1), June, 2018, p. 25.

		efficiently reflect expected progress. There are also capacity issues associated with measuring improvements in watershed and ecosystem services (other than vegetation cover). M&E Implementation rating comments: Efforts were made to improve the indicators following the MTR report. The M&E reporting has drawn upon a central activity and output database for the project.
Effectiveness: Outcome 1 Achievement	**MS***	Most of the planned technical and training outputs under Outcome 1 have been completed. The decision support tools, PER study, technical analyses and PES Strategy as well as the management plans for the project sites will have lasting value. The community-government-university coordination arrangements have been effectively demonstrated as planned. But the important legal and policy development remain significant gaps that affect the potential for the PES approach. The project has had three years to integrate biodiversity conservation into CRGE investment activities and to establish the legal and institutional framework to stimulate PES agreements, but the progress has been slow. Assurances have been provided that Outcome 1 will be completed in the coming months; the final rating will depend on measurable results over the next few months. ***** *It is recognized that this rating may be higher by the December 2019 end of the project or soon after, provided that the legal framework and the integration into CRGE operations occurs as planned.*
Effectiveness: Outcome 2 Achievement	**HS**	All of the planned pilot project site outputs under Outcome 2 have been largely completed. The PES approach has been initiated and 15 agreements are currently being implemented with more expected in the near future. The agreements are relatively small and informal but more substantive agreements are expected. The progress to date in establishing PES at a local level in the absence of national policy support, and the evidence of improved site conditions and watershed processes are significant achievements. Choke site has been given a higher level of protection by regional decree.
Efficiency	**HS**	The extent of protected areas covered - more than one-third greater than the original target, and the significant volunteer contributions from community members relative to the volume and quality of work on the ground, the timely delivery, and the relatively

		low project management costs (4.6%) indicate generally high efficiency and cost-effectiveness.
Sustainability of Outcomes	**L** (negligible risks to sustainability)	The formal organization of CBOs and designation of CPAs along with financial support from PES partners and in-kind support from government and community members, and the success to date in initiating ecosystem recovery (from soil and water conservation and CPA protection) suggests a high probability of sustainability, particularly if the legal framework can be finally established.
Financial risks	**ML** (moderate risks to sustainability)	The local and zonal implementing authorities do not have sufficient resources to provide for development of alternative livelihoods of sufficient scale to maintain momentum following project closure. These agencies have made commitments to maintain the CBO programs but financial capacity to do so is questionable unless significant PES revenues can be generated.
Socio-economic risks	**L**	The community support and changes in land use practices (e.g., open grazing) appear to have produced substantive recognition of the incentives for maintaining the project interventions for restoring forest and watershed values.
Institutional and governance risks	**L**	The CBOs that were visited demonstrated significant leadership and member commitment toward the project. The extent of ongoing technical, organizational and financial support from government authorities in the absence of the project (e.g., assistance in livelihoods development) is less certain as noted under Financial risks above. The relatively low profile of EFCCC within government
Environmental risks	**L**	The project interventions are having a positive effect on ecosystem restoration and watershed management. Some minor risks at certain sites may exist around particular check dams/gabion structures/gully plugs on steep slopes where more engineering attention is required.
Impact of the Project	**S**	The project activities have had a visible impact in key portions of the CPAs, although the area covered and the number of households engaged are only a small portion of the overall protected areas. At least 50% of the community members are reported involved in project activities mostly related to the enforcement of land use restrictions and the introduction of a

		limited number of alternative livelihoods. Impact of the project is linked to scale-up potential of PES agreements and operational integration with the CRGE program.
Overall Project Results	**S**	Acceptance of the MIBC PES concept by GoE remains to be established. While there are significant gaps in Outcome 1, the CBO interventions under Outcome 2 have demonstrated effectiveness on the ground. There is significant momentum at the project sites for community-based conservation and rehabilitation and to demonstrate an initial PES model for further development and expansion in Ethiopia.

5. Lessons Learned

The first lesson that has emerged from the project experience, is that a combination of area closure and active community involvement in protection and soil and water conservation can lead to visible results on-the-ground in a relatively short period and this adds additional inspiration for community participation and management of restricted land uses (fuelwood cutting/open grazing). The communities have raised awareness at the local and government level about what is possible and appear to have recognized the value of alternative livelihoods that can offset traditional, non-sustainable land uses. Support for cooperatives-based CBOs has helped to provide structure and accountability for the community organization. Government support and oversight has been crucial. Customized arrangements for enhancing the participating of women have also shown early promising results.

Secondly, even without a legal framework, small-scale PES schemes have been demonstrated by informal and formal public and private sector support for best practices to protect or enhance ecosystem services. The project experience emphasizes that PES can offer short term incentives to shift practices toward more sustainable long term approaches to ecosystem management and conservation but they have to be well-grounded in community organisations and governance and commitments to enforce restrictions and to support changes in practices that are compatible for conservation of protected areas. [36] The current MIBC PES agreements reflect a lot of variability in the type of buyer-seller exchanges. Flexibility has been

[36] "Without structured and active local governance systems the introduction of PES scheme may create conflict and raises questions on who receives payment, and how effectively, fairly and transparently payments can be managed. This calls for significant engagement with stakeholders, pre-implementation, to ensure that self-organization is able to engage with PES schemes effectively". Linda Pappagallo, Operationalizing payments for ecosystem services for pastoralists in rangeland settings, CGIAR, April 2018, p. 58.

required to adjust the scope and rigor in these agreements to meet the terms of participants. The importance of a legal framework was also highlighted by prospective PES buyers/users who are awaiting this security before proceeding with new agreements. The project period has been too short to fully achieve the expected results at both the policy and site levels. Significant changes in land use and livelihoods require more effort and stronger, more targeted incentives over a longer period.

Thirdly, government policy change particularly requires long, participatory processes even when there is general consensus on issues such as maintaining ecosystem services and biodiversity in natural resources development. While the CRGE Strategy and investment projects address watershed and forest degradation and related biodiversity concerns, there is no targeted focus on enhancing biodiversity. Part of the problem is the cross-cutting nature of biodiversity conservation and ecosystem management within government, and the traditionally low priority given to environmental protection. For example, afforestation and land rehabilitation projects under CRGE are often considered to be sufficient by line ministries to address the biodiversity concerns. Watershed rehabilitation under CRGE is assumed to encompass biodiversity conservation, but biodiversity objectives and safeguards are not directly addressed. Some secondary, informal advisories and indicators of biodiversity have been introduced but these may have limited effect on actual investments in biodiversity conservation.

Fourthly, a key lesson from the design and operational perspective is the need to ensure that alternative livelihoods are an integral part of any conservation programs to provide the basis for restricting traditional fuelwood cutting, charcoal production and open grazing pressures on watersheds. In the case of MIBC, this aspect was under-emphasized in the project design,

Fifthly, there needs to be more careful attention to the M&E plan during the Inception Phase. Many of the indicators were not usable or needed revision as shown by the recommendations in the MTR report. The 'theory of change' in the project design for introducing biodiversity safeguards in development was weak and it also became apparent that project indicators need to be pre-tested to ensure they are relevant and usable. Moreover, cash co-financing commitments by GoE are not reliable given the MIBC experience. These realities need to be recognized in future GEF-funded projects.

6. Conclusions and Recommendations

6.1 Conclusions

1. The project has developed an effective community-based model for initial payment-for-ecosystem services (PES) schemes based on (i) legal CBO cooperatives mobilizing community involvement and cooperation, (ii) the leveraging of technical support and partnerships with local government, line agency experts and universities, (iii) an organised approach to pursuing PES buyers, and (iv) the use of community volunteer labour, savings and microcredit systems to assist alternative livelihoods development and reduce unsustainable land use practices. The policy, legal and institutional frameworks under Outcome 1 are still under development, and may not be fully completed before December 2019 project closure. Simple PES agreements have nevertheless been implemented for community protected area conservation and rehabilitation funded by public and private sector 'buyers' of these services alongside the 3.24 M USD in GEF/UNDP project funding expended to June 2019.

2. Local awareness of the biodiversity values and support for restrictions on open grazing, tree cutting and hunting were apparent from the group discussions and stakeholder interviews, along with appreciation for livelihoods development. The regeneration of vegetation and initial rehabilitation of watershed processes were observed during field visits to two of the four project sites, with related benefits to biodiversity conservation, ecosystem services, sustainable livelihoods, and community empowerment. Further development of this model with added refinements from the project experiences can be expected once the policy and legal instruments are in place to encourage larger investment from prospective PES buyers. The timing of final adoption of the legal framework remains uncertain.

3. The role of alternative livelihoods is a prominent aspect of the necessary incentives for conservation. It was not fully recognized in the project design. A limited range and scale of livelihood activities were introduced using mostly project funds rather than PES sources or an expected government cash contribution ($1.6 M) that did not occur. The 43 CBOs involved in the project sites appear to be well organized and assisted by government advisors and programs. Nevertheless, the closure of the project may pose sustainability concerns at some CBOs unless further funding is secured to broaden and deepen the commitment to new sustainable livelihood opportunities necessary that are for active local protection and management of the Community Protected Areas (CPAs).

4. The technical decision support tools (biodiversity scorecards, digital maps, prioritization lists) provided essential input for the CPA Management Plans that guide land use and watershed rehabilitation decisions. These plans are important and they need to be formally integrated into local, woreda and regional/zonal planning and budgeting as part of the institutional incentive structure for biodiversity conservation. The support for this mainstreaming appears to be high within the government bodies that were consulted although the extent of this integration into government systems is currently unclear. In at least one site (Choke), a special office has been created to lead the conservation program.

5. The boundaries of the project CPAs have had to be expanded from the original planned 20,000 ha to about 34,000 ha due to leakage of restricted activities beyond the initial boundaries. Project staff are recommending even larger areas to encompass the full catchment basins. This reflects good commitment to protecting conservation values and adapting to responses but it also imposes much greater management and patrolling duties for CBOs. A catchment area/ridge to valley approach with greater focus on water management and soil conservation/land stabilization as a prelude to natural regeneration and afforestation warrant further attention in the future development at each site.

6. The quality of soil and water conservation work was reasonably good at the sites visited, especially the most recent work. Seedling growth, fodder production (for 'cut & carry' stall feeding) and natural regeneration were evident. The protocol for gap filling and measuring survival rate of seedlings may need to be better defined and more consistent, and some of the gabion structures and check dams need follow-up assessment of performance. Overall, with technical support from government agencies, reliable rainfall and UNDP/PMU project supervision, the physical works by the CBOs have shown good progress after three years and results from the current planting season also look promising at the sites visited.

7. Some sites showed excessive soil erosion and insufficient surface runoff control along certain access paths and roads, indicating a need for basic drainage management along these routes. Decommissioning of some roads may be worthwhile depending upon specific local needs to maintain access. Gully expansion processes are occurring in some of the upper slopes at some sites which may present a challenge unless more comprehensive treatment interventions are initiated in the future.

8. The current 15 PES agreements have so far generated over 7 Million ETB (244,000 USD) in funding excluding in-kind contributions. Project staff indicate that significant additional PES 'buyers' have shown interest if the legal directives can be established. Various predictions and assurances about the timing of finalizing the legal framework were offered but, despite advocacy activities by the project, uncertainty remains about the status of the proposed Outcome 1 policy and legal outputs.

9. The biodiversity scorecards completed for the four project sites provide generalized rating of conservation status and visual inspection provides ad hoc observation of field results. The primary ecosystem services were related to flooding mitigation (control of runoff), water supply and quality including regeneration of springs and municipal and agricultural water supply, wildlife habitat (tourism) and provision of local livelihood resources (fodder, water supply, etc.). The PES agreements refer to conservation gains and restoring degraded areas for flood mitigation and other purposes but the monitoring system for measuring the improved ecosystem services being funded by PES buyers/users remains subjective and under-developed. The project monitoring system does not effectively track results of the field physical work except through ad hoc observations.

10. The ecosystem valuation studies provided a total value estimate of almost $200 Billion/yr for Ethiopia's ecosystem services.[37] The Biodiversity Public Expenditures Review of the national budget created some level of increased awareness and recognition of the inherent values from conservation-related activity that transects the ministries (See Annex 3 statements of achievements). Biodiversity indicators have also been incorporated into the CRGE monitoring system under the forest sector, and it was argued that biodiversity is informally a pillar within the CRGE strategy and embedded in the GTP. Funding for Ethiopia Biodiversity Institute and EWC has increased in recent years. Land reclamation and rehabilitation activities which support ecosystem services have also been funded by CRGE Facility sector projects. But there is still no strong evidence that the project studies and advocacy activities have directly led to increased priority or funding for biodiversity conservation within the government budgets, an expected result that may have been too ambitious. The failure for GoE to provide the planned $1.6 M in cash co-financing to the project may reflect the low economic

[37] PES Strategic Plan, Studies and Surveys on Opportunities and Challenges to implement Payment for Ecosystem Services in Ethiopia, 2018, p. 51.

priority given to the issue even though there is heightened environmental awareness throughout Ethiopia, and high hopes for PES-type schemes.

11. The primary achievement of the project has been the ability to mobilize partnerships between communities, local and regional/zonal authorities, universities and private firms in addressing the flooding, watershed and biodiversity issues associated with degraded lands in areas of high biodiversity. This is a significant achievement. Linking the CBO conservation efforts to the development sectors and the programs of the CRGE Task Forces was noted by participants as a key challenge to institutionalize the process. The project experience highlights the incentives beyond PES/non-PES funding that are needed to generate a shift toward sustainable land and ecosystems management – namely extensive coordination and cooperation within and between CBO members, government, universities and private sector for specific protected area and related sustainable livelihood outcomes.

12. The management aspects of the project implementation have been effectively implemented, especially given the small PMU and field coordination staff. No significant observations were reported from the annual financial audits. UNDP secured an additional 132,000 USD in funding beyond the original commitment of $200,000 and additional funding is expected in the final stages of the project which should assist sustainability. Project expenditures under Outcome 1 and 2 were 25% and 59%, respectively of total expenditures to June 2019 (Table 4). Outputs achieved from project site activities under Outcome 2, which included substantial in-kind, on-the-ground community and government support may have provided the most cost-effective elements of the project.

13. There is significant momentum to support further development of the MIBC PES model focused on establishing the *Local PES Fund Platform* which would assist sustainability at the project sites and replication potential in other regions. Sustainability and replication will be conditional on completing the policy and legal outputs under Outcome 1, expected in the near future although with some uncertainty about government decision making processes. Scale-up potential is also conditional on developing some formal involvement with the government's CRGE implementation structure, ensuring the community protected areas are an integral part of the CRGE implementation program. This is a key challenge identified by stakeholders, although commitment to such formal involvement of community-based PES in CRGE still needs to be addressed.

6.2 Recommendations

Ten recommendations are presented below. They highlight the need for further engagement with the GoE to ensure that the PES legal framework is approved as soon as possible, coordination with CRGE is established, and that expanded livelihood options are promoted for communities who are actively managing and rehabilitating the project protected areas. The final stages of the project should include presentation of a clear investment case to the government, based on the MIBC model that combines CBO mobilization and CPA responsibility, local authority cooperation line agency technical support, leveraging of PES funding, and management oversight and reporting by EFCCC. These recommendations are presented as an integrated package that is intended to build upon the significant momentum established by the project.

1. **MIBC should update the PES Action Plan and facilitate its post-project implementation by EFCCC and UNDP including action on the Terminal Evaluation Recommendations and the related capacity development in support of the PES approach.**

Rationale: As part of the exit strategy for MIBC, the project needs a commitment and action plan for necessary follow-up on the PES approach by EFCCC and UNDP. The progress to date and the importance of the project to community protected areas warrants a short, targeted output-based program that focusses on (i) finalizing the legal instruments, (ii) securing additional PES agreements with prospective high priority buyers, (ii) developing a concise PES Procedures Manual, and (iv) providing for PES process and procedures development within EFCCC. GoE is appointing an external advisor to expedite the legal aspects. This work should be linked to organizational development to strengthen and institutionalize PES processes within EFCCC and within the CRGE and other relevant programs and projects (e.g., CALM). PES brokering services could be part of the business plan of the Directorate for Ecosystem Valuation and Management within EFCCC. A well-defined one-year workplan would greatly enhance the sustainability of the MIBC project results.

2. **MIBC should prepare a concise, stepwise *PES Procedures Manual* based on PES principles and the project experiences to date to guide Commission staff and to supplement the PES Strategic Plan.**

Rationale: Further consolidation and communication of the basic requirements and steps in formulation and implementation of PES agreements are needed to clarify the specific procedures. The MIBC approach as defined in the PES Strategy, "*where one or more providers sell one or more well-defined Ecosystem Services to one or more*

beneficiaries, for a well-defined period of time", needs more operational precision and technical rigor that meet international PES criteria. Proposed non-voluntary cost recovery mechanisms and revised resource use tariffs should be clearly distinguished from revenues pursued through voluntary PES agreements. More emphasis is needed on the 'payments for specific ecosystem services provided' under PES agreement. These procedures should consider, for example,

(a) the identification of ecosystem services and objectives that PES investment will serve;
(b) the appropriate site strategies to achieve these objectives under the PES agreement;
(c) the selection of key performance indicators (KPIs) for the enhanced ecosystem services;
(d) the preparation of budgets according to accepted cost norms for the proposed work;
(e) the negotiation of the PES agreement between sellers and buyers;
(f) the roles and responsibilities of the partners to the agreement;
(g) the administration of funds and disbursements under the scheme; and
(h) the legal documentation on government authorisation of PES schemes under the supervision of EFCCC.

3. MIBC should strengthen the mandate and capacity of the Directorate for Ecosystem Valuation and Management in EFCCC to oversee and assist development and marketing of the PES approach for biodiversity conservation and ecosystem-based climate change adaptation (EbA), and to provide PES brokering services to regional and zonal offices.

Rationale: The PES program needs an institutional home within EFCCC with a few designated professional staff who have been empowered and trained to implement the program. This will require commitment of staff from EFCCC, and possibly additional capacity building support such that the staff are able to pursue and facilitate PES agreements with public and private sector partners and the communities in accordance with the established procedures. An EFCCC program plan for PES expansion is also needed as part of the project exit strategy and implementation of the PES Action Plan. The EFCCC staff should be involved in advocacy to show how PES initiatives complement the CRGE program.

4. MIBC should focus further economic valuation studies on demonstrating the business case for PES investments in ecosystem services and biodiversity

conservation at a site level under the *Local PES Fund Platform* currently being developed by UNDP and EFCCC.

Rationale: Ecosystem valuation studies have mostly focussed on raising awareness of the magnitude of implied monetary values from conservation and sustainable utilization of ecosystems. These theoretical studies have overshadowed the more urgent need for applied economic analysis of conservation investment options and the sound 'business case' that they can offer Ministry of Finance and others. For example, an assessment of the costs and benefits of community drainage control and flood mitigation in Arba Minch municipality catchment area. Demonstration of this type of analysis at the project scale would significantly assist support for the *Local PES Fund Platform* by highlighting marketable values and the practical cost-effectiveness of conservation. It would provide more useful information on the economic and financial incentives for conservation than further generalized studies of broad ecosystem values.

5. **MIBC should ensure formal adoption of the pilot project Management Plans by the responsible government authorities including statements of commitment, budget and staff to support ongoing implementation and undertake revisions as needed and appropriate to encompass the catchment areas proposed by the implementing CBOs.**

Rationale: The Management Plans prepared for each project site have provided relatively informal technical guides to land use zones and conservation/rehabilitation activities. There were assurances during the TE field mission that these plans are endorsed and adopted by regional/zonal and local authorities including certain budget commitments. Given the level of effort and importance of these plans for sustainability and ongoing implementation and expansion of the site conservation activities, at is advisable to obtain written commitment to the plans, and where necessary to update the plans based on site experiences to date and the expansion of protected area boundaries that may have recently occurred at each of the sites. Approved management plans are key documents for institutional strengthening (e.g., the proposed Choke Mtn Conservation and Development Office).

6. **EFCCC and CRGE Steering Committee should establish an MOU to guide coordination with CRGE Task Forces in assisting PES agreements, biodiversity safeguards in CRGE and implementation of the *Local PES Fund Platform*.**

Rationale: The *Local PES Fund Platform* is still under development by the project. The concept needs to be fully endorsed and supported by the CRGE structure. Establishing

a linkage to CRGE for mainstreaming biodiversity conservation incentives into the development sectors was a key concern expressed during the TE discussions. CRGE Tasks Forces are a main entry point for future PES agreements but they need to be formally supported and guided by an MOU with EFCCC on the proposed working relationship between the parties. Further, at the national level, mainstreaming biodiversity safeguards within CRGE investment projects needs to be clarified and highlighted. A statement of basic operational principles for protection of biodiversity should accompany the MOU. Some effort to integrate biodiversity conservation into the ATP and CRGE may have occurred but these principles now need to be operationalized in the EFCCC-CRGE working relationship.

7. **EFCCC, in collaboration with the Ethiopia Biodiversity Institute and CRGE Facility, should develop and demonstrate practical *core indicators of ecosystem change* related to (i) land cover, (ii) hydrological systems, (iii) land degradation, (iv) habitat/population status for selected species, and (v) carbon sequestration that can provide better monitoring of results of PES agreements.**

Rationale: Measurable results are a central element for effective PES schemes and accountable payments. The current PES agreements state that the provider [CBO] will "achieve the conservation gain of the land under its stewardship that can be expressed in terms of restoring degraded areas". However, there is no empirical accounting of the ecosystem services that are being funded by the PES "buyers/users". While detailed monitoring and impact assessment may not be possible, there are feasible and cost-effective means of assessing the main biophysical results that underpin the relevant ecosystem services. Core indicators of these results could include five general accounts:

- Land cover: the Biodiversity Scorecard employs remote sensing imagery and data to assess time series changes in land use and vegetation cover that generally reflect ecosystem and habitat changes;
- Hydrological systems: changes in stream hydrographs (e.g, mean annual discharge), aquifer recharge (e.g., downslope well water levels), sediment discharge (e.g., sedimentation monitoring traps) have been used to measure watershed rehabilitation results and could be selectively applied to PES projects.[38]

[38] The rate of erosion in the project sites has been associated with plant coverage (tons/ha/yr) and slopes, as summarised in the PES Strategic Plan site profiles. Hydrological impacts of CRGE land rehabilitation have been monitored, for example, using "Access to water and water consumption" as impact criterion; see http://www.mofed.gov.et/documents/10182/32227/ FTI+Final+report.pdf /f2a43bdb-c94a-4ff6-957f-a6725d689786

- Land degradation: there is an established model for mapping the general status of land degradation in Ethiopia at a course scale.[39] This could be downscaled to a finer resolution with added ground truthing by project staff to provide for measurement of land stability and productivity within project watersheds.
- Habitat/population status: the land cover assessment under the Biodiversity Scorecard is used as a rough proxy for assessing habitat conditions. This is a very generalized method. More project-specific assessment of selected or indicator species of concern jn the particular project area could be used to provide better empirical data on habitat quality and quantity. In some cases, estimates of changes in targeted wildlife populations may be possible where this is a specific objective in the CPA Management Plan.
- Carbon sequestration: the carbon budgets of different vegetation regimes can be estimated from available data sources to provide a general indication of GHG reduction benefits.[40]

All of the above implies a more rigorous and proactive monitoring system with the application of existing methods and feasible data sources to assess PES project results. It also advances the national results-based monitoring systems in related land rehabilitation projects.[41] It would require technical assistance from the relevant experts and GIS specialists involved in biodiversity conservation and forest land management. But the use of a more structured and evidence-based approach to monitoring ecosystem service results would greatly improve the PES model being promoted by the project, and provide international and domestic investors with high level quality assurance on the specific results delivered.

8. EFCCC should update the wording in PES agreements to ensure independent inspection and certification by government experts on works completed as per accepted standards.

Rationale: To ensure transparent oversight and quality assurance and the confidence of investors, it is important that the role of the "neutral verifier" referred to in PES agreements be well-defined. Many of the relevant standards for physical works can be found in Ethiopia's *Guidelines for Participatory Watershed Development*

[39] https://knowledge.unccd.int/sites/default/files/inline-files/ethiopia-ldn-country-report-final.pdf

[40] See for example, Table 6: Economic Analysis – Greenhouse Gas Mitigation Potential, Ethiopia Climate Action Through Landscape Management (CALM), Technical Assessment Document, The World Bank, 2019, p.61

[41] This recommendation should be implemented in consultation with the *National Forest Sector Development Program* 2018-2028 (support from Norway and Sweden) and the pending *Climate Action Through Landscape Management 2019-2028* (support from The World Bank).

(2015/2019). These best practices can serve as reference points for assessing completion of physical works on PES projects. Not all of the drainage control structures were effectively installed (see Annex 9 Review of Project Sites) and more attention to quality is warranted, especially if gully treatments are planned in the future.

9. **The Government of Ethiopia should undertake an *Alternative Livelihoods Analysis* of potential livelihood activities and opportunities at Project Sites including those aimed at increasing the participation of women, which would facilitate the future programs for conservation of these sites.**

Rationale: The project document anticipated the support of GoE for livelihoods development. The current activities are very limited in type and quantity, and with few economic activities in core areas (e.g, agroforestry, NTFPs could be developed). While it may be too late to introduce expanded livelihoods, the project could prepare for future programs of the CBOs in the post-project period.

10. **The CBOs involved in implementing the Pilot Projects should prioritize physical demarcation of the protected area boundaries, establish benefit-sharing agreements for work undertaken on private (non-community) lands, and simplify the public communications messaging to encourage community support for the protected areas.**

Rationale: The field visits highlighted these three issues that need to be addressed. Others may be added as identified by the PMU staff in the final Quarterly work plan. There have been few organised opportunities for internal, self-assessment of field implementation performance and constraints. The final stages of the project are a good time for project implementation participants to reflect on the site work to date, the lessons learned for future projects, and the priorities for moving ahead after project funding ends.