

Global Environment Facility (GEF)

Land Degradation Focal Area

Pilot Portfolio Monitoring and Learning Review

Combating Land Degradation through Integrated Ecosystem Management

*****Draft for Review*****

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Executive Summary

PART 1 - BACKGROUND AND CONTEXT FOR PORTFOLIO MONITORING AND LEARNING REVIEW

1.1 PMLR function in the GEF Secretariat

Portfolio Monitoring and Learning Review (PMLR) is now a key component of results-based management (RBM) in the GEF, with emphasis given to knowledge generation building on project level practice, experience and lessons (see Box 1). In this context, the GEF Secretariat was requested by the GEF Council to conduct monitoring and learning missions as one means of tracking progress towards corporate objectives. In order to assess how the MLR function will be rolled out, a pilot was proposed for each focal area based on the corporate learning objective of enhancing the catalytic effect of GEF financing with the aim of

- identifying, scaling-up and replicating best practices;
- improving the science evidence base to develop projects, strategies and policies; and
- incorporating learning from demonstrations across all focal areas.

Box 1 – GEF Secretariat Functions on Portfolio Monitoring and Learning

The GEF-5 RBM approach focuses on improving portfolio monitoring and learning. It gives attention to using monitoring results information for accountability, internal management, learning and knowledge management. During GEF-5, the Secretariat will focus on three main areas: Portfolio Outcome Monitoring; Portfolio Process Monitoring, Portfolio Learning. Based on a review of evaluations and the fourth overall performance study (OPS 4) results, extensive internal discussions and focal area-led discussions with the tasks forces, Technical Advisory Groups and with STAP, a selected number of monitoring questions were identified at both corporate and focal area levels. At corporate level these include:

At risk projects and mitigation measures

- Which types of projects are rated at high risk? (source: Project Implementation Reports (PIR) / Annual Monitoring Report (AMR))
- Are mitigation measures sufficient in at the project design stage and during implementation once a risk has been identified? (PMR review desk study and mission)

Projects with extended project duration periods

- Which types of projects experience significant extended delays to their end date? (PIR/AMR)
- What are the major causes of project extensions and are these causes sufficiently addressed at design stage? (Portfolio Monitoring Report (PMR))

Enhancing the catalytic effect of GEF through identifying, scaling up and replicating best practices

- Which activities contribute to scaling up, replication and leveraging of resources? (PIR/AMR and PMR)
- How did GEF financing contribute to scaling up and replicating the best practices coming from the project? (PMR)

Enhancing GEBs through improved understanding of social impacts

- Do projects designs take into consideration the causal relationships between environmental management and local community welfare? (PIR/AMR and PMR)
- Are the social dimensions sufficiently assessed during project design and responded to during implementation? (PMR)

Enhancing the impact of capacity development provided across focal areas

- What types of capacity building are most effective in supporting achievement of GEBs? (PMR)

1.2 Piloting PMLR in the Land Degradation Focal Area

1.2.1 The Integrated Ecosystem Management (IEM) Focus

For the Land Degradation Focal Area (LD FA), the pilot PMLR was focused on Integrated Ecosystem Management (IEM) approach to combating land degradation as a priority issue. The IEM concept was originally framed in the context of implementing the *ecosystem approach* as adopted at the Fifth Session of the Conference of Parties to the Convention on Biological Diversity¹. In the descriptions presented in the COP decision, the ecosystem approach essentially presented an opportunity for Parties to accommodate the need for holistic and integrated management of ecosystems that meets the need of society while safeguarding components (see Box 2). As financial mechanism for the Conventions, the GEF responded to the COP decision by creating a new Operational Program that embodies the principle of integrated management.

Box 2 – Ecosystem Approach

- (1) The ecosystem approach is a strategy for the integrated management of land, water and living resources that promote conservation and sustainable use in an equitable way.
- (2) An ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential structure, processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems.
- (3) This focus on structure, processes, functions and interactions is consistent with the definition of ‘ecosystem’ provided in Article 2 of the Convention on Biological Diversity.
- (4) The ecosystem approach requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning.
- (5) The ecosystem approach does not preclude other management and conservation approaches, such as biosphere reserves, protected areas, and single-species conservation programs, as well as other approaches carried out under existing national policy and legislative frameworks, but could, rather integrate all these approaches and other methodologies to deal with complex situations.

Source: Convention on Biological Diversity (Adopted at COP5)

Prior to establishment of the land degradation focal area, the IEM Operational Program (OP12) was an important entry point for sustainable land management projects financed by the GEF. The OP12 provided a comprehensive framework to manage natural systems across sectors, and political or administrative boundaries within the context of sustainable development. It facilitated inter-sectoral and participatory approaches to natural resource management planning and implementation on an ecosystem scale, and enabled prioritization and strategic sequencing of needed policy reforms, investments, and other interventions.

While discussion of strategic priorities of focal areas (FA) started in the third GEF replenishment phase (GEF3), the OP12 portfolio remained largely experimental by accommodating only projects that were multifocal. The OP was aimed at catalyzing widespread adoption of comprehensive ecosystem management interventions that integrate ecological, economic, and social goals to achieve multiple and

¹ <http://www.cbd.int/decision/cop/?id=7148>

cross-cutting local, national, and global benefits. These benefits may include two or more of the following:

- a) Conservation and sustainable use of biological diversity, as well as equitable sharing of benefits arising from biodiversity use;
- b) Reduction of net emissions and increased storage of greenhouse gases in terrestrial and aquatic ecosystems;
- c) Conservation and sustainable use of waterbodies, including watersheds, river basins, and coastal zones; and
- d) Prevention of the pollution of globally important terrestrial and aquatic ecosystems

Consistent with the incremental cost principle and the broad programmatic approach of this Operational Program, GEF funding, which will specifically support interventions to capture the global benefits of a program, will emphasize co-financing and cost-sharing. Project eligibility was based on addressing strategic priorities in at least two of the six FAs, with emphasis on two main strategic directions: capacity building for integrated ecosystem management; and innovative and/or indigenous approaches to IEM using a combination of natural resource management (NRM) approaches.

1.2.2 Importance of IEM in the Land Degradation Focal Area

Under OP12, the GEF envisioned a sustainable transition from conventional to integrated ecosystem management approaches by providing agreed incremental cost finance for technical assistance, investments, financial services, and targeted research to address constraints limiting the adoption of integrated approaches. As an approach to combating land degradation, the IEM therefore reflects GEF's mandate for innovativeness in the context of generating global environmental benefits. Piloting the PMLR on the IEM approach will therefore contribute to understanding GEF's catalytic effect and to further advancement of the focal area strategy and portfolio, including linkages to the Biodiversity, International Waters, and Climate Change focal areas. This is also consistent with Learning Objectives in the GEF5 LDFA strategy.

Overall goal of the GEF Land Degradation Focal Area (LD FA) is to contribute to arresting and reversing current global trends in land degradation, specifically desertification and deforestation. For GEF5, the LD FA strategy takes into account emerging issues for sustainable land management (SLM) in rural production landscapes, such as:

- management of competing land uses and resulting changes to secure ecosystem services,
- managing the exploitation of natural resources to balance short-term economic gains with the need for ecological and social sustainability, and
- adaptation to climate change and potential for mitigation through reduced emissions and carbon sequestration.

The strategy therefore embodies the landscape approach and integrated ecosystem management principles to maximize global environmental benefits from combating land degradation. An emphasis is also placed on portfolio level learning on integrated approaches to combating land degradation. The specific objective is to enhance multiple benefits from management of landscape mosaics, mixed agricultural and forest ecosystems, with linkages to other focal areas. Learning from SLM projects that embody the IEM approach will contribute to more effective understanding of GEF's catalytic effect in the LD FA.

The GEF5 strategy also emphasizes the need for harnessing and safeguarding ecosystem services (carbon, biodiversity, water) through sustainable management of production landscapes, forest landscapes, and landscape mosaics, and through capacity building for increased and effective implementation of the UNCCD by countries. The IEM approach offers a practical option for countries to leverage GEF financing for improving the efficiency of national programs to combat land degradation. For the Pilot PMLR, GEF's catalytic effect was looked at in terms of potential replication strategies (e.g. models for overcoming technical and institutional barriers), mobilization of co-financing (governments, GEF Agencies, other donors), and achieving coordination while developing successful partnerships. This will increase understanding of the IEM approach to combating land degradation as implemented by the cohort of GEF-funded projects in the LDFA portfolio.

1.3 The Pilot PLMR – Objectives, Methodology, and Outputs

1.3.1 PMLR Objectives

Overall objective of the pilot PMLR was to assess progress with application of the IEM approach to combating land degradation in the cohort of projects financed under OP12 (*see Framework in Annex 1*). The pilot PMLR will generate lessons on (a) overall progress with implementation of the IEM approach, (b) GEF's catalytic effect on the approach at portfolio level, and (c) recommendations for future PMLRs related to LD focal area. The information will be used to generate and disseminate briefing materials on GEF's catalytic role in combating land degradation based on progress with implementing the IEM approach in different geographical contexts. It will also be used to improve portfolio level learning and synthesis of innovative approaches in the LD focal area.

The pilot includes a mission component to facilitate engagement and consultation with key stakeholders on overall implementation of the approach in an ongoing GEF project, with a specific focus on understanding the catalytic effect of GEF's financing. Drawing on the original project document, the mission also enabled learning about challenges and risks associated with the IEM approach and these are addressed during project implementation. The pilot mission also identified best practices for outcome monitoring as a means to enhance the LD focal area tracking tool. The lessons and experiences gained from the pilot mission were examined in relation to a cohort of SLM projects in the GEF3 OP12 portfolio.

1.3.2 IEM Portfolio-level Questions

The pilot PMLR was focused on mechanisms and strategies used by the GEF to promote catalytic effects, including demonstration, replication and scaling-up. It also considered the range of activities used in implementing the IEM approach, including knowledge sharing, mainstreaming, partnerships, institutional and individual capacity building, as a means of achieving catalytic effects. Both intended and unintended catalytic effects of GEF activities were considered. The following major questions formed the basis for monitoring and learning:

- i. What are the drivers that generate catalytic effect?
- ii. How does the GEF's catalytic role influence the choice of activities to generate GEBs?
- iii. How is progress toward targeted IEM outcomes being tracked?
- iv. What tools and indicators are being applied for monitoring the IEM approach?

For the purpose of the pilot PMLR, only five projects were selected to represent a range of the geographical contexts, agroecologies, and scales of implementation. The five projects are listed in **Table**

1 together with financing amounts, GEF Implementing Agencies, and approval and closure dates. This table is accompanied by Annex X, which provides a brief description of each project, rationale for their selection, and highlights of their relevance to the focal area pilot PMLR. The projects are all from the cohort financed under OP12 and currently under implementation across a range of contexts and geographies. The selected projects represent the following five difference circumstances in which the IEM approach is being implemented globally:

- i. SLM in dryland ecosystems at the level of rural communities - *Sahel Integrated Lowland Ecosystem Management, SILEM Phase I* (Burkina Faso; World Bank)
- ii. SLM in dryland ecosystems across multiple scales, from local to provincial to national – *PRC-GEF Partnership to Combat Land Degradation: Capacity Building Phase 1* (China; ADB)
- iii. Integrated management of watersheds and river basins - *Western Kenya Integrated Ecosystem Management Project* (Kenya; World Bank)
- iv. SLM in rangeland ecosystems - *Sustainable Management of Arid and Semi-arid Ecosystems to Combat Desertification in Patagonia* (Argentina; UNDP)
- v. SLM in a transboundary context - *Integrated Ecosystem Management in the Transboundary Areas between Nigeria and Niger Phase I: Strengthening of legal and institutional frameworks for collaboration and pilot demonstrations of IEM* (Nigeria-Niger; UNEP)

Table 1. List of Projects Selected for the LD FA Pilot PMLR

GEF ID	Country / Project Name	GEF Agency	GEF Grant [\$ million]	Co-financing [\$ million]	GEF Approval Date ²	Closure Date
1178	Burkina Faso: <i>Sahel Integrated Lowland Ecosystem Management (SILEM), Phase I</i>	WB	4.5	20.5	10/2002	12/2010
956	China: <i>PRC-GEF Partnership - Capacity Building to Combat Land Degradation, Phase I</i>	ADB	7.7	7.3	10/2002	6/2008
1362	Kenya: <i>Western Kenya Integrated Ecosystem Management Project</i>	WB	4.3	5.5	5/2004	6/2010
1022	Nigeria – Niger: <i>Integrated Ecosystem Management in the Transboundary Areas between Nigeria and Niger, Phase I</i>	UNEP	5.4	9.9	5/2004	11/2010
2379	Argentina: <i>Sustainable Management of Arid and Semi-arid Ecosystems to Combat Desertification in Patagonia</i>	UNDP	5.2	26.5	3/2006	3/2012

1.3.3 Pilot Mission

The pilot PMLR included a 10-day mission and field visit³ to the *Sahel Integrated Lowland Ecosystem Management* project in *Burkina Faso*, one of the four portfolio projects applying the IEM approach to combating land degradation. Prior to the mission, a review of relevant project documentation was conducted. The review included PIRs, GEF Agency monitoring reports, project publications, etc., to generate information related to the major questions identified for the PMLR. Additional documentation was also reviewed during the mission, which was organized to coincide with a scheduled World Bank

² Date of Work Program entry

³ The GEF team for the mission included Mohamed Bakarr, Ulrich Apel, and Orissa Samaroo (Junior Professional Associate in the Results-based Management Team)

supervisory mission. The documentation provided by the project included assessment of overall progress with implementation, reports from pilot micro-watershed where the IEM approach was being implemented, and relevant background information on the project approach.

In addition, consultations were held with key stakeholders on the project, taking into consideration instances of catalytic effect of GEF financing. The stakeholders included government officials, staff of other GEF Agencies, executing partners, and target beneficiaries. As noted previously, the focus was on mechanisms and strategies for realizing catalytic effects that were incorporated into project design. Discussions considered the role of stakeholders in producing catalytic effects, timing, and mechanisms for producing and promoting catalytic effects. Six villages in two of the micro-watersheds were visited to conduct interviews (open-ended) and direct observations on implementation of the IEM approach. A careful record was made of all information gathered, including use of video equipment.

1.3.4 Synthesis and Reporting

The main output of the pilot PMLR is presented in this report, which includes a detailed synthesis of findings from implementation of the IEM approach in the SILEM project. The monitoring and learning review specifically addressed the following:

- a) overall progress with implementation of the IEM approach, including institutional frameworks, capacity building, knowledge sharing and management, and typology of activities included under the IEM in the context of combating land degradation, and monitoring of project outcomes and global environmental benefits;
- b) GEF's catalytic effect on the IEM approach, focusing specifically on policy and institutional transformations, investments leveraged, partnerships, coordination, and diversity of interventions for combating land degradation, and potential for up-scaling; and
- c) Recommendations for future PMLRs related to LD focal area.

PART 2 – PILOT MONITORING AND LEARNING REVIEW MISSION TO BURKINA FASO

2.1 Overview of the SILEM Project

2.1.1 The Baseline Project for SILEM – Community Based Rural Development Phase 2 (CBRD2)

The Sahel Lowland Integrated Ecosystem Management (SILEM) project was approved by the GEF Council in 2004 under the Operational Program on Integrated Ecosystem Management (OP12). The project was funded with a GEF grant of \$4.5 million and an additional \$20.5 million in co-financing from the Government of Burkina Faso and the World Bank. With World Bank as GEF Implementing Agency, SILEM was designed as a five-year pilot program for addressing natural resource degradation through the IEM approach. The baseline project for the SILEM is the Community Based Rural Development (CBRD) Program, a 15-year Government of Burkina Faso and World Bank International Development Assistance (IDA) funded program that works in all 302 rural communes of the country with a main focus of poverty alleviation. Originally, the project was designed as a three-phased, 15 year project to complement the respective phases of the CBRD. However, SILEM complemented only part of the first phase of CBRD due to a more than 2-year time lag between CBRD's and SILEM's start and will come to an end in the middle of CBRD's second phase. SILEM accompanies the CBRD program to mainstream environmental concerns into the poverty agenda and to provide decentralized funding for demand-driven and community managed projects that address natural resource management issues identified at the grassroots level.

Box 2 – GEF concepts as applied during design of the SILEM Project

Baseline Project – The SILEM project was designed as part of the CBRD, which is the baseline project that was funded by the Government and World Bank IDA Loan

Baseline Scenario – The CBRD will have been implemented with no sustainable land management focus, and hence the risk of continued land degradation and desertification in the fragile lowland systems

GEF Project – The SILEM project was implemented within the CBRD to pilot the IEM approach for ensuring a focus on sustainable land management in the fragile lowland production systems

Incremental Reasoning – Financing provided by the GEF was invested directly in piloting the IEM approach in targeted micro-watersheds where sustainable land management leads to both local and global environmental benefits

Co-financing – The \$20.5 million co-financing for SILEM was part of the total funding for CDBR that was specifically directed toward natural resource management at national level

2.1.2 National Context for SILEM

During the sign of SILEM, there were several important national development drivers that provided the foundation for core principles embodied in the IEM approach. First, there were national strategies and action plans in place to address major environmental, rural development, poverty, and natural resource management challenges in the country⁴. Effective implementation of these plans is based on

⁴ These include the National Strategy to Combat Poverty, National Environmental Action Plan (NEAP), the Rural Development Strategy, National Program for Land Management (1984, 1996), the National Soil Fertility

decentralized institutions and grassroots activities that are demand-driven and managed by local communities. Second, the Government of Burkina Faso had issued a “*Lettre de Politique de Développement Rural Décentralisé*” that outlines the basic principles of decentralization, institutional support, and investment in community-based actions. This document, which is supported by its development partners, established the fundamental basis for linking the IEM approach to other national planning processes for sustainable development.

Third, the baseline CBRD included several triggers agreed to by the Government and its development partners to ensure an enabling environment for implementation. For example, an important trigger was the modality adopted by the government which allows for integration of investment activities financed by IDA into a “*Fond Permanent pour le Développement des Collectivités Territoriales du Gouvernement (FPDCT)*”. This is expected to facilitate flow of resources into communities where investments can be directly linked to the needs and priorities identified by the communities.

Finding 1 - GEF financing for piloting the IEM approach through SILEM exemplifies the GEF’s catalytic role in supporting countries to generate global environment benefits in the context of national development

These triggers presented an opportunity for the Government and World Bank to pilot an approach that was (and still remains) relatively untested in the context of sustainable land management, especially in Africa where land

degradation and desertification are major threats to rural livelihoods. Because the CBRD was designed as a 15 year program, it was envisioned that piloting the IEM approach will allow for adaptive management of all processes involved as a means of mobilizing sustainable solutions that can be implemented nationally. It will also enable the Government to constructively implement action plans for the global conventions to which it is signatory. The GEF Operational Program on IEM (OP12) therefore presented an appropriate entry point for GEF financing because the OP was created to facilitate integrated approaches that harness synergies and manage tradeoffs in generating global environmental benefits.

2.1.1 Design of SILEM and link to the CBRD

As a pilot project, SILEM specifically embodied a targeted application of the IEM approach to combating land degradation and desertification within the CBRD. Because Burkina Faso is a dryland country with more than 80 % of the population dependent on agriculture and livestock management, the risk of land degradation is both widespread and pervasive. And since the CBRD was intended to be demand-driven at the grassroots level, the Government was well aware that communities will prioritize a diversity of needs (from health centers to veterinary services) that may overshadow the need for combating land degradation. SILEM was therefore designed with the baseline Project components in mind and thus the components are largely complimentary. The main difference has to do with the pilot components.

The baseline Project funds a land tenure pilot activity (results of which are applied to the SILEM) for which there is no complement under the SILEM, while SILEM funds a pilot activity focused on

Management Strategy and Action Plan (1999), the National Desertification Action Plan (1999), the National Biodiversity Monograph (1999) and the National Biodiversity Strategy (2001), and the National Rural Forestry Program (2004).

partnerships for sustainable financing for environmental restoration and management, for which there is no complement under the baseline Project. Piloting SILEM with GEF financing was therefore a deliberate strategy to zero-in on areas at risk of degradation and desertification where IEM can add value to other priorities identified by communities. The following four substantive components were identified for investment in under SILEM:

- Local Capacity Building for IEM
- Local Investment Fund for IEM Sub-projects
- Institutional Capacity Building for IEM
- Building Partnerships for Sustainable IEM

Finding 2 - The piloting of SILEM within the CBRD by the Government of Burkina Faso and the World Bank creates synergies and cost effectiveness

By employing a pilot approach, it was envisaged that natural resource management options will be created for communities located in the highly vulnerable agro-

ecologies, and for which principles of IEM can be applied to enhance sustainable land management. The areas targeted were four major watersheds located along a north-south ecological gradient that extends from the dry Sahelian zone dominated by pastoralists to the sub-humid lowlands where cereal (sorghum, millet, and maize) cultivation is the dominant land use practice. The target watersheds were also located in four different provinces to enable mainstreaming of the IEM approach within the same institutional and governance frameworks in place for the CBRD program.

While the CBRD is a rural development and poverty alleviation project covering all 302 rural communes of the country, the SILEM pilot was further concentrated in micro-watersheds within each of the four major watersheds. The micro-watersheds covered 15 rural communes in 158 selected villages, all of which were involved in piloting a relatively new and untested approach to sustainable land management. By focusing on micro-watersheds within the larger watersheds, the SILEM project allowed for natural resource management to be more directly integrated in the bottom-up decision-making process that was embodied in CBRD. As a result, synergies and cost effectiveness are evident in the approach to implementation in the four provinces where both projects operate.

The two projects also co-operate in strengthening the institutional frameworks that support community actions. While all natural resource interventions in the pilot micro-watersheds are financed by SILEM, the community level activities are jointly supported with CBRD staff. Because of the synergies in project administration and support, more than 50% of the GEF resources are directly allocated to activities annually prioritized and implemented by communities. As a result, almost 3,000 micro-projects have been financed exceeding the originally planned number and the budget earmarked, in addition to funding provided for technical support and services to the communities.

2.1.2 Institutional Framework for Implementation of SILEM

The SILEM project is executed by the National Program Coordination Unit for the CBRD, which is based in Ouagadougou and has staff located in all Provinces across the country. Implementation of the IEM approach involves engagement of a wide range of stakeholders and partners by the NPCU. The framework for achieving this is an important highlight of the SILEM project. In addition to the World Bank and NPCU, key stakeholders include government institutions at provincial and commune level,

national technical agencies and institutions, and civil society organizations. Village communities were both major stakeholders and beneficiaries, whose role underpinned the entire project approach as implemented by the project.

Finding 3 - Full project ownership by all stakeholders represents a good opportunity for consolidating and potentially up-scaling the project approach

The World Bank as GEF Implementing Agency focuses on oversight for overall delivery on project objectives and achievements. This is assured through annual supervisory missions,

which is jointly conducted with the NPCU to assess project achievements in relation to financial disbursements. The World Bank also prepares and submits annual project implementation reports (PIRs) to the GEF, the last three of which indicated all round “satisfactory” rating for progress with achievements. The NPCU is responsible for overseeing day-to-day operations including coordination of SILEM priorities within the CBRD at national level. This seamless integration enables effective and efficient communication across the teams, which also facilitates decision-making on project implementation needs.

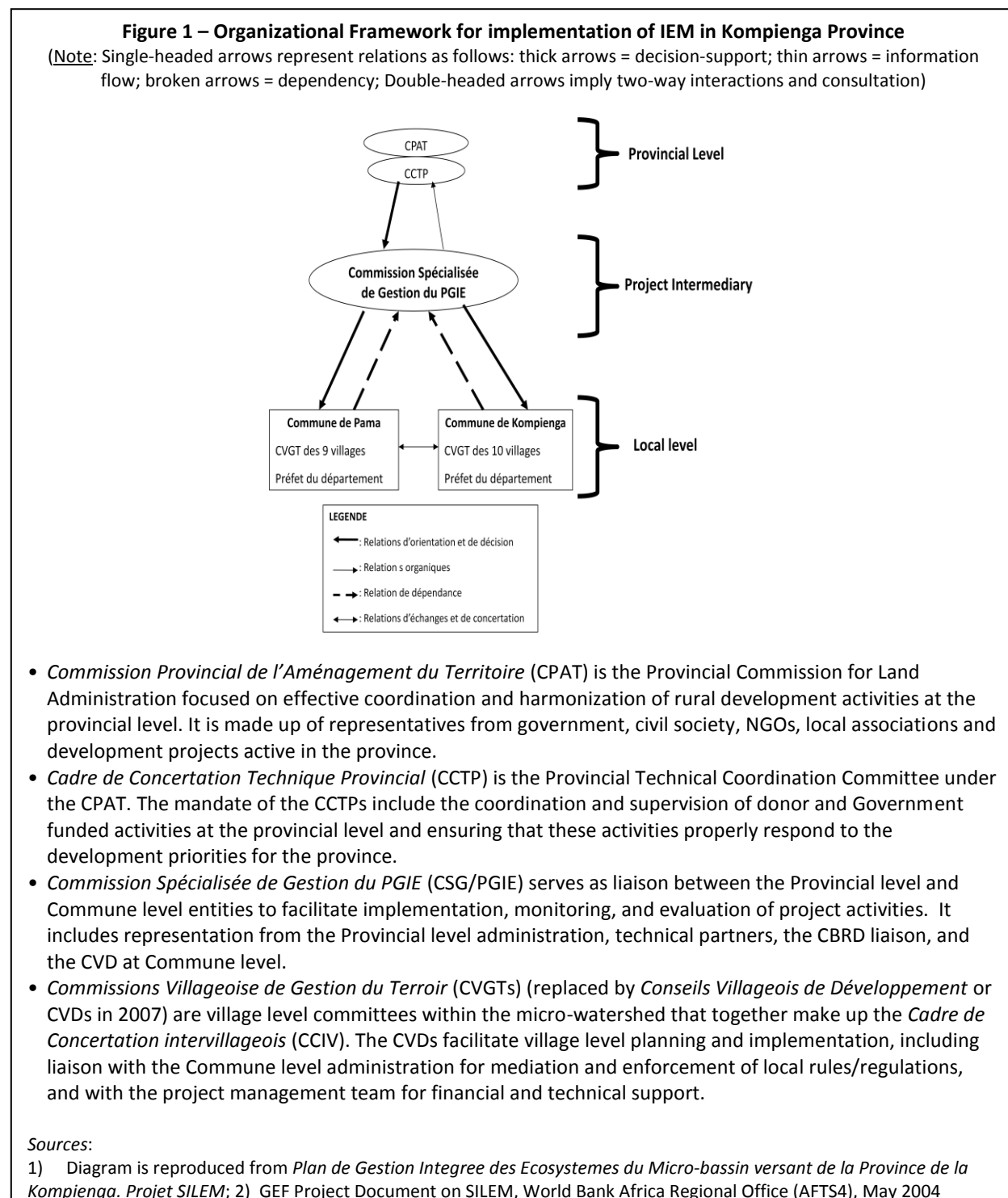
The SILEM team includes six full-time professional staff, with one in each of the pilot provinces and two in Ouagadougou serving as coordinators of project activities at national level. The team is responsible for day-to-day implementation of the project, including coordination of technical assistance (training, demonstration, monitoring) for communities based on priorities identified annually by the communities. By locating professional staff in each pilot micro-watershed, the project is well positioned to directly respond to demands of communities, including liaison with other key stakeholders at the Commune and Provincial levels. This important function is further enhanced by all of the staff being Burkinabes who are fluent in the local languages and knowledgeable about the local cultures and norms.

2.1.3 Stakeholder roles and responsibilities

Overall organization of project management and institutional framework for implementation, including locally based staff working directly with communities demonstrates full ownership of SILEM within the pilot micro-watersheds. This project ownership is promising in terms of sustainability of results and potential up-scaling of the IEM approach to combating land degradation nationally. The involvement of and support by local governments is instrumental in project implementation and enhances the recognition of local land use priorities in provincial level development plans. The process of empowering communities including women and different ethnic groups, to make decisions and manage conflicts in a participatory manner is an important development tool in the pilot micro-watersheds.

Furthermore, the bottom-up process for decision-making on land use priorities (i.e. community-driven-ness) and the top-down support for implementation of those priorities (i.e. financial, technical, and legal) have helped to create an atmosphere of trust among the various stakeholders in a manner that translates into effective management of the micro-watershed. This is particularly reinforced by the important roles and responsibilities of Government agencies in supporting the decisions and actions of communities as shown in Figure 1 for the Province of Komoedji. In each of the pilot provinces, the SILEM project fully capitalizes on stakeholder involvement at the following levels:

- **Provincial Level** – The *Haut Commissaire* is a major stakeholder for facilitating and streamlining investment within the province, including flow of resources to support the decentralized community-driven priorities for sustainable land management. At this level, the Provincial Technical Coordination Committee or *Cadre de Concertation Technique Provinciale* (CCTP) operates under the Provincial Commission for Land Administration or *Commission Provinciale de l'Aménagement du Territoire* (CPAT) to coordinate activities at the provincial level.



- *Local Level* – The *Commandant de Commune*, *Préfet du Department*, and *Le Maire* (Mayor) all play an important role in the facilitation and mediation of actions between villages where necessary, and provides general guidance on the formulation of rules and regulations on land use. Support for enforcement of local rules and agreements (or “*conventions*”) are also provided within the Commune administrative system. In the villages within each micro-watershed, an annual general assembly is convened by the CVGTs for decision-making on land use and management priorities. This results in the identification of micro-projects for financial and technical support.
- *Project Intermediary* – The provincial and local entities are linked through the *Commission Spécialisée de Gestion du PGIE (CSG/PGIE)*, which serves as liaison for supporting communities to implement IEM in the pilot micro-watersheds. Other key stakeholders including centers of excellence, civil society organizations, private sector, etc. are facilitated at this level. This includes contracts for service provision, training, research and monitoring with institutions as needed by activities within the micro-watershed.

As shown in **Figure 1** for the SILEM pilot micro-watershed in Koupela Province, this partnership framework enables information sharing and flow between the communities who prioritize and execute interventions according to their needs, and the provincial and national government agencies that are well placed to support the successful implementation of IEM. The intermediary created by SILEM draws entirely on technical expertise from institutions that also have vested interest in supporting community-driven actions. As a result, the SILEM project is influencing how government institutions implement extension activities in rural communities. This has important implications for sustainability of the IEM approach and potential for upscaling nationally to combat land degradation and desertification in Burkina Faso.

2.2 Project approach – context for generating global environment and development benefits

2.2.1 Application of the Integrated Ecosystem Management (IEM) Approach

The institutional framework for implementation of SILEM embodies key principles of IEM (see Box 3), and demonstrates how communities can be empowered to combat land degradation and desertification in the context of addressing rural development priorities. As a result, the IEM approach as piloted in the SILEM project under the national CBRD program has potential for out-scaling across all watersheds where integrated natural resource management at village level is essential for improved livelihoods. The IEM approach also provides the framework to manage natural systems across administrative (village and commune) boundaries and different sectors based on livelihood assets of the local communities.

Finding 4 - The IEM approach implemented by the SILEM project facilitates more effective management of natural resources with existing traditional land use practices combined with some innovation

The facilitation of participatory and intersectoral engagement at village level allows for problem-solving and conflict resolution, and management of tradeoffs that arise as a result. SILEM is primarily based on

participatory land use planning to address specific livelihood needs and priorities at village level. The project enables communities to delineate land resources as a means to accommodate multiple livelihood needs. And by successfully negotiating conflicts to integrate multiple needs within and

between villages, the project is contributing directly to diversification and intensification of production systems across the pilot micro-watersheds.

Box 3 - The Twelve Principles of Integrated Ecosystem Management

Principle 1 – The objectives of management of land, water and living resources are a matter of societal choice.

Principle 2 – Management should be decentralized to the lowest appropriate level.

Principle 3 – Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

Principle 4 – Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.

Principle 5 – Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach. The rationale of ecosystem functioning and resilience depends on a dynamic relationship within species, among species and between species and their biotic environment, as well as the physical and chemical interactions within the environment.

Principle 6 – Ecosystems must be managed within the limits of their functioning.

Principle 7 – the ecosystem approach should be undertaken at the appropriate spatial and temporal scales. Its rationale is that the approach should be bounded by spatial and temporal scales that appropriate to the objectives.

Principle 8 – Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for long term.

Principle 9 – Management must recognize that change is inevitable (the ecosystem approach must utilize adaptive management in order to anticipate and cater for such changes and events and should be cautious in making any decision that may foreclose options, but, at the same time, consider mitigating actions to cope with long-term changes such as climate change).

Principle 10 – The ecosystem approach should seek the appropriate balance between, and integration of, conservation, and use of biological diversity.

Principle 11 – The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

Principle 12 – The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Source: Convention of Biological Diversity (Adopted at COP5)

Building on priorities identified by the village communities, the SILEM project has facilitated the improvement of existing land use practices and a variety of innovative soil conservation techniques, crop management and agro-forestry practices. In combination, these options contribute to enhancing sustained productivity of land under use for crops and livestock, while at the same time creating environmental benefits mainly through increased vegetative cover in the landscape. Because the activities are seamlessly integrated into the respective social and economic context, some degree of diffusion is already taking place through farmer-to-farmer interactions thereby suggesting progressive adoption rates across villages.

The IEM approach to combating land degradation as implemented by the SILEM project is as much about the social, institutional, and livelihood dynamics as it is about the biophysical and environmental interventions for sustainable land management. The formulation of land use rules and regulations, the

translation of these rules into written contracts, physical signs and demarcation posts, and the enforcement mechanisms through local guards and protection groups are all based on principles of the IEM approach.

2.2.2 Geographical and Spatial Context

The national environmental strategies identify land degradation and desertification as the main issues facing the rural economy, resulting in decreased soil fertility, biodiversity loss, declines in arable lands, decreased agricultural productivity, and increased vulnerability of rural communities to climate change. The SILEM project was specifically designed to demonstrate how sustainable improvement of the productive capacity of rural resources (natural, physical, human, and financial) can be achieved in affected watersheds. The project aims at providing local governments and rural communities with adequate capacity and incentives for IEM as a means of improving the natural resource base, thereby reducing poverty and vulnerability. By focusing the SILEM project on combating land degradation and deforestation in affected watersheds, it is therefore safe to assert that the Government of Burkina Faso has a well defined rationale for leveraging successes of the pilot project as a national priority.

Because SILEM was designed as a pilot project, a process of national level consultation and decision-making was a major factor in determining priorities. The priority-setting process was influenced by geographical and spatial variations in the dominant land use practices, and the need to foster integration of priorities while at the same time achieving environmental and development benefits.

[Include brief summary here on the criteria used for selecting pilot sites]

The micro-watersheds were identified as the appropriate spatial and temporal scale for the application of an integrated ecosystem approach (IEM) for the management of natural resources by local communities. Four micro-watersheds have been selected as SILEM pilot areas, and located in four provinces: Soum, Sanmatenga, Kourittenga, and Kompienga. The pilot areas cover 158 villages that belong to 15 rural communes. The selection follows a North – South transect from the Sahel zone in the extreme North of the country, over the Sudanian zone down to the semi-humid zone in the South. Soil erosion by water and wind is very pronounced in the North, deforestation and forest degradation become more apparent problems in the South. Biodiversity also shows a gradient from North to South with high biodiversity in Kompienga Province, where several Nature Reserves are located.

Table 2. Characteristics of the 4 pilot areas

Soum	Sanmatenga	Kourittenga	Kompienga
Sahel Zone	North-Central Zone	East- Central Zone	Eastern Zone
400 – 600 mm annual precipitation, Steppe vegetation	600 – 700 mm annual precipitation, Savanna with shrubs	700 – 800 mm annual precipitation, Savanna with trees	800 – 950 mm annual precipitation, Savanna with trees, Riparian forests
Pastoral land use systems (partly transhumance)	Agro-pastoral systems	Agro-silvo-pastoral systems	Agro-silvo-pastoral systems
15 – 30 inhabitants/km ²	30 – 50 inhabitants/km ²	50 – 80 inhabitants/km ²	15 – 30 inhabitants/km ²
67 pilot villages	43 pilot villages	29 pilot villages	19 pilot villages

Figure xx. Map of Burkina Faso showing location of pilot areas

2.2.3 Main Production Systems in the SILEM Project Provinces

Traditional production systems and land use practices in the pilot sub-watersheds fall into five major categories: *agriculture*, involving crop production, mainly cereals and cotton; *agroforestry*, involving useful of trees on farms; *livestock*, with both cattle and small ruminants; *forestry and wildlife*, with patches of native vegetation protected in the landscape; and *fisheries* in freshwater bodies. The production systems are integrated into dynamic agro-sylvo-pastoral land use systems. A key focus of the SILEM project was to support community-level efforts to enhancing long-term sustainability of the systems and practices by integrating management at micro-watershed scale with GEF financing. Specific interventions were tailored toward improvement of the practices based on priorities identified by the communities.

Agriculture: Smallholder agriculture production is mainly based on sorghum, millet, maize, groundnut, cotton, and vegetables such as beans, pumpkin, melon, tomatoes. The major challenge prioritized by communities is soil degradation. Project interventions primarily aim at the increase of the vegetative cover in these systems through the introduction of innovative soil conservation and protection techniques (*Zai* technique), direct mulching and cropping (DMC), and stone bunds between plots to improve water infiltration and minimize run-off.

Agroforestry: Traditionally, high value trees on farms and grazing lands are utilized for multiple purposes such as fruits, forage and fodder for animals, medicine, fuelwood, and special products such as shea butter (from *Vitellaria paradoxa*). However, communities were constrained by social, financial, knowledge resources to harness trees as valuable assets. In addition to improving traditional practices, the project introduced fruit trees (mango, guava, cashew nut), nitrogen fixing trees (*Acacia nilotica*), and live fences (*Jatropha curcas*, *Hibiscus* sp.) to increase vegetation cover and further diversify production.

Livestock management: Cattle, sheep, and goat are the main livestock species that are traditionally raised in free grazing arrangements. The main project intervention is to reduce the pressure from competing land use for livestock and agriculture and forestry in the landscape by introducing regulations and management practices such as marked livestock corridors between agricultural fields, designated grazing areas, and forage production. Further, the project has installed water points for animals.

Forests and wildlife management: Forest areas have traditionally provided timber, fuel and fodder and served as hunting areas. Its overuse and unregulated management has led to deforestation and forest degradation. The project intervenes through designating forest protection and wildlife management areas, village based natural regeneration areas, and in one case through the establishment of an 11 hectares arboretum for *in situ* protection of rare trees and plants. These areas are the outcome of participatory planning processes at village and inter-village level.

Fisheries: Kompienga Lake is an important source of fish for the province and beyond, yet the lake has been subject to overfishing over the years. The project improves fisheries management through temporal fishing bans and restricted fish breeding areas. In addition, the unwanted sedimentation of the

lake is addressed by the introduction of SLM practices in the watershed and an increase of tree based production systems in the vicinity of the lake.

2.2.4 Thematic aspects of Integrated Ecosystem Management (IEM)

Social aspects: The IEM approach as implemented by SILEM is primarily based on participatory planning processes to address land use priorities and specific livelihood needs at village level. The planning process starts with a participatory problem analysis and results in village land use plans and activity plans for identified 'micro-projects' for natural resource management interventions. Micro-projects are mostly implemented by individual households, in some cases also by farmer groups or entire villages. The interventions must have a clear link to land management in order to be eligible for project support.

Participatory land use planning at village level primarily delineates land resources to accommodate multiple livelihood needs. The formulation of resource management regulations, the translation of these regulations into written contracts, the establishment of physical signs and demarcation posts, and the enforcement mechanisms through local guards and protection groups are all aiming at reducing the pressure from competing land uses and allowing for better conflict negotiations and for diversification and intensification of production systems. The main land use conflicts arise from the competition of agriculture and livestock production. It is often the case at village level that different ethnic groups with their traditional and specific livelihood strategies and gender specific needs require harmonization. This necessitates truly participatory planning processes facilitated by local technicians and project staff who speak local languages. Local guards and protection groups are supported in their efforts to implement the agreed regulations.

Consequently, activity planning is based on the results of the land use planning process. Activity planning primarily identifies micro-projects to be implemented over the project period of 5 years and is broken down into annual plans. These plans are aggregated at sub-watershed level. The priorities identified by the village communities are fully demand driven and facilitate a variety of sustainable land management practices such as soil conservation techniques, crop management and agro-forestry practices, improved livestock management practices, and enabled village based natural regeneration of degraded areas. The demand driven approach ensures that all activities are seamlessly integrated into the respective social and economic context.

Finding 5 – The participatory approach in a community driven development is a powerful driver of sustainable land management

The participatory project approach also entails the establishment of village committees in the project villages in order to ensure the social organization of the work and supervise

management and monitoring of the activity plans. The project signs agreements with these committees regarding the activities to be carried out, the prescribed time frames, the necessary participation, the roles and responsibilities of the committee established and the technical training to be carried out. Because land degradation problems are often not restricted to village boundaries, the project also facilitates collaboration through creation of inter-village committees.

Economic aspects: The IEM approach as implemented by SILEM emphasizes the need for sustainable incentives to improve traditional resource management or to introduce innovation. In the long run, only the improvement of the productive capacity of resources and higher yields ensure the adoption of IEM

practices. In the start-up phase, the project provides access to financing for testing innovative soil conservation practices and new species. In addition, access to financing is provided for activities to improve and increase natural resource management for income generation (e.g. fish smoking, fishing boats, apiculture, domestication of wild animals). The production of seedlings of species to be introduced into the production systems is done in local tree nurseries that at the same time generate income for the nursery owners. Delineation of hunting areas provides seasonal employment opportunities for villagers to act as local hunting guides. This income generation reinforces forest protection in the vicinity of villages.

Biophysical aspects: The application of practices and techniques for improved natural resource management recognizes that (a) the traditional land use systems are appropriate but can be made more effective, (b) technical innovations are required to make local production systems more sustainable and to facilitate adaptation to climate change, and (c) the applied techniques all aim at improving the environmental and economic results simultaneously seeking an appropriate balance between, and integration of soil protection, production, and conservation of biodiversity. The IEM approach as applied in the SILEM project involves adaptive management to deal with the dynamic composition of the local population, fluctuating markets, and the changing environmental situation. The typology of biophysical interventions includes the following: (i) *soil conservation and protection*, (ii) *agroforestry*, (iii) *livestock management and pastures*, (iv) *forestry and wildlife management*, and (v) *fisheries*. The techniques, their applications, and overall coverage in the micro-watersheds are described in Table 3.

2.2.5 Capacity building and institutional strengthening

Finding 6 – Targeted capacity building for SLM at the village level reinforces the demand driven approach

The approach to capacity building and institutional strengthening is directly targeted at the implementation of the identified

activities at village level. In this way it enables communities to directly apply new techniques and tools based on the needs they have prioritized. The project stresses the importance of local trainers able to speak local languages, delivery of training events directly in the field where interventions are targeted, and the formation of farmer groups to facilitate farmer-to-farmer learning. In addition, the organization of farmer field visits to other villages and areas where SLM practices are applied and the exchange between farmers themselves is an important element in the capacity building efforts.

Village-level and inter-village committees are trained to enable their supervision and management functions as determined by the nature of agreed interventions. For example, building capacity for inter-village activities is encouraging spatial integration of land use priorities at scale. These committees therefore play an important role in ensuring long-term sustainability of the IEM practices implemented by communities. The knowledge and skills being gained by them will therefore contribute to strengthening local level mediation of land use conflicts before there is any need to engage the commune or provincial level administration.

Institutional strengthening is directly related to natural resource management through activity ('micro-projects') implementation contracts with service providers. In this context, the service providers include:

- government forestry, agricultural, and livestock extension agencies with mandates to support rural land users in the relevant production sectors,

- local experts working privately and who generally serve as facilitators or ‘animators’ to introduce new natural resource use options or practices, and
- civil society groups involved in natural resource use activities, such as a women’s group in Fada N’Gourma that process and package honey products.

Because institutional strengthening is a major component of the SILEM project that was targeted for GEF financing, a particular emphasis is placed on streamlining the role of these service providers in order to influence their practices. For example, they are required to develop training modules under the supervision of the project before they conduct training at village level. In this way, technical support services are strengthened. Furthermore, the involvement of local governments in project implementation promotes an enabling framework at the local level and helps local governments to implement national policies within the local context.

Table 3. Description of SLM Techniques Applied in Pilot Micro-watersheds under the SILEM Project

Techniques	Application	Importance for Environment and Livelihoods	Coverage
<i>Soil conservation and improvement techniques</i>			
Zai technique	Zai is a hole, a planting pit with a diameter of 20-40 cm and a depth of 10-20 cm - the dimensions vary according to the type of soil. Pits are dug during the dry season from November until May and the number of Zai pits per hectare varies from 12,000 to 25,000. The number of Zai per hectare and their dimensions determine how much water they harvest. The bigger the number and the smaller their size, the less water they each harvest. The excavated earth is ridged around the demi-circle to improve the water retention capacity of the pit. After digging the pits, composted organic matter is added after the first rainfall, the matter is covered with a thin layer of soil and the seeds placed in the middle of the pit.	<ul style="list-style-type: none"> captures rain and surface/ run-off water; protects seeds and organic matter against being washed away concentrates nutrient and water availability at the beginning of the rainy season increases yields reactivates biological activities in the soil and eventually leads to an improvement in soil structure. 	Applied on 1,941 ha; Potentially increasing sorghum and maize yields
Stone lines in agricultural fields	Method in which agricultural plots are dissected by lines of stones (appr. 20x20x20 cm) every 20-30 m.	<ul style="list-style-type: none"> slow water runoff and reduce erosion during rain storms 	Applied on 3,837 ha near lake area; Potentially reducing sedimentation into lake
Nitrogen fixing trees	Planting of nitrogen fixing species (e.g. <i>Acacia nilotica</i>) as hedgerows around and scattered inside agricultural plots.	<ul style="list-style-type: none"> enrich nitrogen in soils and improve nutrient cycling moderate harsh conditions by providing shade and protect against wind erosion 	In total 941,900 trees planted with 40% survival rate (total includes scattered tree planting)
Rehabilitation of degraded soils	Use of soil scarification techniques and treatment of ravines to recuperate severely degraded sites	<ul style="list-style-type: none"> Increase land available for agriculture 	1,004 ha of sites scarified and 250 ravines treated
Compost production	Decomposing and recycling organic materials in loam-walled piles of appr. 2.5x2.5 m without cover. Among the materials that are composted are food wastes, leaves, weeding material, plant trimmings, straw, and animal manure.	<ul style="list-style-type: none"> using compost as manure in the field, especially in combination with the Zai technique increases yields 	8,269 composters established supporting the application of the Zai technique
Direct mulching and cropping (DMC)	Cultivation practice in which the soil is not tilled and is permanently covered by plants. Maize stalks are left on the field as mulch and worked into the soil as they	<ul style="list-style-type: none"> preserves and restores soil fertility protects soil and organic matter against being washed away 	Applied on 193 ha

	decompose.	<ul style="list-style-type: none"> reduces labor input for weeding 	
<i>Agro-forestry techniques</i>			
Live fences	Planting of multipurpose plants around agricultural fields (<i>Jatropha curcas</i> , <i>Hibiscus</i> sp., <i>Acacia</i> spp.).	<ul style="list-style-type: none"> prevents livestock from entering fields provides by-products moderates harsh conditions 	56,500 m of live fences planted around fields
Fruit tree plantations	Planting of mango, cashew nut, guava in agroforestry arrangements.	<ul style="list-style-type: none"> generation of income increase of vegetative cover in agricultural system gradual shift from agricultural to tree-based systems to reduce erosion 	249 ha of fruit tree plantations established by the project, adoption by other farmers at larger scale
Scattered tree planting / tree nursery establishment	Scattered planting of multipurpose trees. 17 tree nurseries established that have produced 195,700 seedlings.	<ul style="list-style-type: none"> provides by-products increases vegetative cover in agricultural system 	In total 941,900 trees planted with 40% survival rate (total includes nitrogen fixing trees)
<i>Livestock management practices</i>			
Designated grazing areas	Delineation of suitable areas for grazing.	<ul style="list-style-type: none"> reduce conflict potential between different land users improves livestock productivity enables natural regeneration of areas without grazing 	17,500 ha of existing areas delineated; 3,514 ha newly created
Livestock corridors	Delineation and clear demarcation of 30-50 m wide livestock corridors between agricultural fields.	<ul style="list-style-type: none"> allow livestock to cross through designated portions of crop land reduce conflict potential between herders and farmers reduce browsing and trampling damages in agricultural plots disadvantage: soil compaction in corridors 	417 km of corridors established and demarcated
Forage and fodder production	Provision of seeds for forage production.	<ul style="list-style-type: none"> improves livestock productivity reduces free grazing 	235 kg of seeds provided
Water points	Construction of water wells, installation of water pumps and distribution system for animals.	<ul style="list-style-type: none"> improves livestock productivity 	10 water points constructed
<i>Forestry, Wildlife, and Fisheries management</i>			
Village-managed Natural Regeneration	Designation of 100 – 200 ha areas for natural regeneration of forest a) with assistance through direct seeding and b) without assistance except strict protection	<ul style="list-style-type: none"> increase of vegetative cover in the landscape 	In total 505 ha in two villages regenerated (142 ha with and 363

	through protection guards and protection regulations.	<ul style="list-style-type: none"> • carbon sequestration • Local biodiversity protection and maintenance • Collection of NTFPs (medicinal plants) 	ha without assistance)
Improved village forest management	Designation and demarcation of areas for improved management by villagers.	<ul style="list-style-type: none"> • Improved management for fuelwood harvesting 	In total 231 ha in two villages
Forest protection and hunting areas	Delineation of multipurpose areas for forest protection where hunting and recreational activities can take place.	<ul style="list-style-type: none"> • Local biodiversity protection and maintenance • Creates employment opportunities for hunting guides 	7,500 ha delineated and signboards established
Protection of lake embankment areas & Fish breeding area protection	Protection and re-vegetation of lake embankment area. Designation of small lake areas near the lake shore (about 0.3 - 1 km ²) to protect fish breeding grounds.	<ul style="list-style-type: none"> • Increase fisheries productivity • Local biodiversity protection and maintenance • Prevent immediate disturbance by grazing animals 	260 km strip around Komienga lake; 508 ha of enrichment planting within the strip; Two fish breeding areas designated

2.3 Project Monitoring and Evaluation

2.3.1 Framework for Monitoring and Evaluation

The original project document included an overall framework for monitoring and evaluation of SILEM implementation based on clear results and measureable indicators at the *global, purpose, objective, and output* levels. At the objective and output levels, the framework was focused on performance and process indicators for assessment of progress with implementation of the IEM approach, including achievements from investment in the village-based priorities. At the global and purpose levels, the framework emphasized measurable indicators for assessment of project impacts. These were focused mainly on global environmental benefits (i.e. hectares with SLM practices, improvements in biomass and vegetative cover, increase in soil carbon, and biodiversity improvements) and development benefits (i.e. increase in crop productivity, improved access to natural resources, and improvement in livelihoods).

The monitoring and evaluation activities are implemented in accordance with this framework, and the designed to accommodate both the top-down and bottom-up interventions in the project. The top-down activities are mainly tracked with indicators that reflect overall *performance* of the project under the three main components, which include local capacity building, investments in micro-projects, and strengthening of institutional frameworks for implementation of the IEM. Development benefits (impacts on beneficiaries) were also tracked in this context since the indicators used were more directly linked to those of overall project performance. From the bottom-up perspective, indicators are focused on tracking *results and impacts* of the various activities prioritized and implemented by the communities. This includes impacts on the land, habitats, species, and production systems. The framework is implemented in each of the pilot micro-watersheds and the information gathered is aggregated across all four micro-watersheds to determine progress toward achievement of project goals and objectives.

The implementation of monitoring and evaluation also takes into account specific roles of different actors and institutions. For example, the CVDs play an important role in monitoring of project performance at village level, in some cases with the support of technical experts and facilitators. The village level data is consolidated at level of the micro-watershed by SILEM project staff and with support of relevant technical experts. Baseline data and monitoring of impact indicators was lead by experts from the University of Ouagadougou and from the International Union for the Conservation of Nature (IUCN) program in Burkina Faso. The SILEM project coordination team is responsible for collating all data from the pilot micro-watersheds to synthesize results for reporting. This institutional framework and partnership arrangement enhances quality in data collection and reporting, as was evident from the documentation presented during the pilot mission.

2.3.2 Monitoring of Project Performance and Development Benefit Indicators

The process and procedure for monitoring performance indicators is more fully integrated into the project implementation and consistent with those of the CBRD baseline project. As a result, development benefits are directly linked to performance monitoring, and conducted in partnership with the communities. Outcomes and outputs are tracked on the basis of work plans and investment

priorities developed annually with the communities. These are considered under the three main components of the project:

- i. Local capacity building – progress was tracked on communication, inter-village dialogues, community organization, annual investment planning, and training
- ii. Investment in micro-projects – progress with achievements from implementation of micro-projects were tracked in the following categories:
 - protection and restoration of soil and water resources (*type and number of innovations, type and length of structures constructed, hectares land covered*)
 - reforestation and forest management (*hectares of land covered*)
 - improved crop, livestock and bee-keeping practices (*type and number of innovations, number of villages/farmers involved*), and
 - action-research to support or introduce alternative land use innovations (*type and number of innovations*)
- iii. Strengthening institutional capacity – progress was tracked on all activities geared toward strengthening the institutional framework for implementation of the IEM approach to combat land degradation

Data collection is done annually for all the indicators under these components as a means of demonstrating progress with the project achievements. Financial flows into the various interventions and activities were closely linked to actually delivery of results within the pilot micro-watersheds. Although the demand for funds to invest in micro-projects far exceeded what was available, the project was implemented to stay within the budgets allocated to each component. Because of the emphasis on shifting resources to on-the-ground activities, more than 50% of the GEF funding was invested directly in micro-projects designed and prioritized by the communities.

Details of overall achievements are presented in **Table 3** for the various IEM interventions in the micro-watersheds (under the column labeled “Context”). More than 35,000 hectares of land is being transformed by improved soil conservation techniques for food crop production, agroforestry, livestock and community forest management. The livestock “corridors” created amount to over 400km, which is also land that is being naturally re-vegetated due to the locally agreed rules that restrict all other forms of use in the designated areas. Through agroforestry practices, nearly 1 million high value trees have been integrated into the micro-watersheds for live fencing, soil improvement (nitrogen-fixing legumes), livestock fodder, and production of fruits and other tree products. The introduction of composting for use in both crop and agroforestry systems lead to the creation of more than 8,250 compost pits across the micro-watersheds.

These achievements are all driven by village level prioritization and actions, which enables the communities within each micro-watershed to take full ownership for them. In addition to their importance for combating land degradation, these achievements are also evidence of the value-added of implement IEM to address land use conflicts (such as between crop farmers and livestock herders through creation of the corridors) and to harness innovations for generating income. It was therefore

no surprise that all communities visited during the pilot mission expressed a deep sense of pride for what was being accomplished in their communities with support of the SILEM project.

2.3.3 Monitoring of Global Environmental Benefit Indicators

While the pilot mission did not specifically address impacts (global and development) of the SILEM project, there was a deliberate focus on learning about indicators used and approaches to monitoring such impacts as outlined in the original project document. Baseline data and information on impact indicators was obtained during the first year of implementation in 2006. During the process, monitoring protocols were established in designated field plots in the pilot micro-watersheds using standard methodologies for the following:

- soil organic matter – changes in macrofauna, total carbon (*grams/kilogram of soil*)
- animals – number of arthropod species in both terrestrial and aquatic environments
- plants – diversity of herbaceous plants (*Shannon-Wiener Index*), aboveground vegetative biomass, and phenology of common plant species
- land productivity – average annual yield of crops in pilot villages (*in kilograms/hectare*)

The protocol was applied in three subsequent years – 2007, 2008 and 2009. Plant diversity, vegetative cover and biomass were reported as variable across sites and with no consistent result between years. A similar observation was made for arthropods, except for species in the Formicidae, Gryllidae, Carabidae and Scarabaeidae that are abundant enough to enable characterization of habitats within the micro-watershed. Some modest progress was reported on improvements in soil health, which was attributed to mitigation of land degradation effects and rehabilitation measures. The indicator for land productivity (i.e. average annual crop yield) showed significant increase (231% - 472%) after three years of project implementing improved soil and water conservation techniques in three villages.

Finding 7 – Monitoring of impact indicators during implementation of IEM produces variable results and is costly

Although the SILEM project was in principle promoting sustainable land management actions through the IEM approach, the inconsistencies shown for some indicator measures were

attributed to specific lack of targeted activities for restoration of degraded areas. Furthermore, the cost and logistical challenges of implementing the protocol became prohibitive after the third year of data collection. As a result, monitoring of GEBs during project implementation turned out to be impractical and unrealistic. With baseline data and protocols already established, the potential for impact assessment is still possible if factored into end-of-project activities.

In general, however, the agro-sylvo-pastoral systems targeted by SILEM are dynamic, with humans, livestock, and biophysical factors all playing an important role. For example, interventions such as *couloirs d'accès* (“corridors” set-aside for livestock movement) that are prioritized by communities do not include any form of management beyond demarcation and enforcement of the boundaries. Hence, regeneration of native vegetation and improvement of soil conditions in the demarcated areas will be subject to influence by livestock, fires, droughts, etc. It is therefore certain that evidence of impacts as determined by the range of indicators used in the project will only be manifested after a long period, or

at least beyond the life of the project. And this is based on the assumption that rules agreed to by the communities for use of the “corridors” will be sustained and potentially up-scaled across the entire watershed.

2.4 Project sustainability and replicability

2.4.1 Financial leverage during project implementation

As highlighted in Part 1, the original design of SILEM was influenced by the baseline CBRD project, which is a major government-driven investment program. As a result, the implementation SILEM is grounded in a national framework that is fully owned and supported by the government. This has made it possible for almost all GEF financing to be directed toward interventions that generate global environmental benefits in the context of addressing local level priorities. Because the project team is anchored within the CBRD support structure at national and provincial levels, the administrative and management costs of implementing SILEM is largely absorbed by the baseline project. The cost-effectiveness is further reflected in the integration of monitoring and evaluation activities within the baseline project, which enables streamlining of data collection and accountability for resource flows.

Financial leverage is also evident in the implementation of project components, especially the investments in micro-projects. The annual planning by communities includes due consideration to in-kind contributions toward the total financing needed. For example, commitments are made by the communities to contribute labor and materials for some of the land management interventions that they prioritize. All of the committees created for coordination of activities and enforcement of agreed rules are entirely voluntary. At the level of the Commune and Provincial administration, personnel time for guidance to communities on development of rules and regulations is also contributed as in-kind.

[need to check if the in-kind contributions are quantified in the project reports]

2.4.2 Knowledge generation and management

Because of the knowledge intensive nature of IEM, the SILEM project has put in place a very constructive knowledge management system, which includes documentation of processes and procedures in the form of practical guidelines as well as tools for data collection to facilitate reporting. The knowledge management system is fully integrated into the CBRD to enhance the use of common platforms and data sharing. Templates and forms for data collection, such as for annual monitoring of performance indicators are all standardized to facilitate aggregation of data from village level to micro-watershed and across all four pilot micro-watersheds. The quality of reporting is therefore greatly enhanced because of the standards and consistencies enforced by the project.

In terms of knowledge generation, the project has focused mainly on technical resources to support implementation. From interpretation of government policies and legislative provisions to decision-making on land management interventions, the SILEM project has produced a number of useful materials and resources. One of the most important knowledge products in this regard is the “*Guide d’elaboration des Plan de Gestion Integree des Ecosystemes a l’echelle des Micro-Bassins Versant*”

(PGIE/MBV)” or “*Guide for elaborating the Management of Integrated Ecosystem at micro-watershed scale*”, which was printed as a small booklet in December 2008. The guide booklet contains a brief description and interpretation of all relevant national laws that are otherwise unknown to communities. It clarifies the rights and responsibilities of communities over management of natural resources, and guides the process of decision-making to address land use conflicts at grassroots level. Against the backdrop of existing legal and institutional frameworks for natural resource management, the guide booklet also describes the processes involved in planning and implementation of IEM at micro-watershed scale.

The guide booklet is in effect a synthesis of the principles and practices of IEM that are already being applied within the SILEM project, and therefore benefited from the lessons and experiences in the pilot micro-watersheds. From the very first year of the project, detailed management plans were developed for each of the pilot micro-watersheds based on needs and priorities identified by communities. Each of the plans include detailed descriptions of the context and challenges associated with land and natural resource management, and processes agreed to by communities for implementation of the IEM approach. The plans are essentially used as “manuals” for implementation of IEM, and are updated annually to reflect emerging opportunities for achieving goals within the micro-watershed.

The tools and methodologies embodied in the IEM approach as applied in SILEM were detailed in a “*Technical Reference Manual for Integrated Ecosystem Management*” that was produced in 2007. This document describes all the different techniques, with simple illustrations, and explains the context in which they can be applied to address particular problems. A total of 61 techniques are described and grouped according to the following themes:

- Soil and water conservation (8 techniques)
- Restoration/Rehabilitation of degraded soils (5 techniques)
- Management of soil fertility (7 techniques)
- Agroforestry (4 techniques)
- Improvement of silvicultural practices (8 techniques)
- Improvement of pasture production (13 techniques)
- Improvement of “*l’embouche*” – not sure what this word translates to in English – fattening of livestock(?) (7 techniques)
- Improvement of animal health (3 techniques)
- Protection of lake/river banks (2 techniques)
- Integrated management of catchment areas (4 techniques)

The SILEM project also generates knowledge on various aspects of project implementation, including monitoring and evaluation activities. Almost all of the data and information compiled across all four pilot micro-watersheds are used exclusively for administrative purposes. There is no evidence of any peer-reviewed publication that brings the experiences of IEM implementation to the public domain. Given the quasi-experimental design inherent in SILEM (four watersheds, stratified ecological zones and dominant land use systems), such a contribution will generate opportunities for assessing options and limitations for up-scaling national. It will also help to understand how the IEM approach adds value to

rural development relative to other approaches being applied elsewhere in the country. More importantly, it will help to raise the profile of IEM as a practical option for combating land degradation and desertification in the Sahelian ecosystem as a whole, including the value-added of GEF financing.

2.4.3 Public awareness and dissemination

Despite the lack of global or regional public goods emerging from implementation of the SILEM project, significant efforts have been made to raise awareness about the IEM approach at national level. Many of the project guidelines and information sheets prepared in French have been translated into several local languages. Several thousand copies of the guide booklet on IEM have been produced for dissemination to various stakeholders and institutions across the country. The location of project staff in provinces also enables them to participate in provincial level activities, which helps to raise the profile of SILEM and create a sense of pride that was evident in the communities during the pilot mission.

Beyond the pilot provinces, SILEM is quite well known by as a flagship project among various institutions and government agencies based in Ouagadougou. Other GEF Implementing Agencies such as IFAD and UNDP are already harnessing the IEM experience for implementing of projects in other parts of the country. As a result, the SILEM project team is occasionally invited to participate in consultation processes to solicit their knowledge. This has helped to give the project some degree of visibility among development partners in the country, which is an important step for potential up-scaling of the IEM approach at national level.

Public awareness has been greatly increased at national level with the recent production of a video documentary on the IEM approach to combating land degradation. The video does an excellent job of explaining the rationale and principles involved in participatory land use planning at the micro-watershed scale. It includes interviews with community leaders, village committees, government officials at national and provincial level, and other key partners. The video was broadcast nationally during its initial release, and copies are now being disseminated. Although the video does not specifically highlight the value-added of GEF financing, the underlying principles of incremental costs and global environmental benefits are quite evident.

2.5 Conclusion

The SILEM project will officially close in December 2010, with completion of all activities in the pilot micro-watersheds. While the GEF pilot mission did not address impacts of the project, it is clear that SILEM has made significant progress in raising profile of the IEM approach nationally. This has been made possible by achievements in the pilot micro-watersheds as shown by the outcome indicators, as well as an efficient knowledge management and public awareness approach. It is not clear, however, whether there is adequate understanding and appreciation of the approach in the government for replication and up-scaling nationally. The multi-phase approach that was inherent in its original design now faces major uncertainty after GEF5 reforms shifted decision-making on utilization of funds to countries through the System for Transparent Allocation of Resources (STAR). Although the potential for up-scaling remains questionable, the legacy of successes in the pilot micro-watersheds will remain

linked to the CBRD baseline project, which is still under implementation and will receive additional World Bank IDA financing for a third phase.

PART 3 – PILOT PMLR LESSONS AND BEST PRACTICES

3.1 Overview of the IEM Portfolio

3.1.1. Quality at entry – Review of 2005 IEM Portfolio Assessment

In 2005, the GEF Evaluation Office conducted a study on the OP12 portfolio based on projects approved between 1999 and 2004⁵. Projects in the OP12 portfolio followed an integrated and multi-focal approach to the management of natural systems. Projects were designed to be multi-focal, dealing with two or more focal areas, and synergistic, where achievement of benefits in one focal area leads to increased benefits in another. A total of 38 projects were analyzed to answer the following overall question: “*What lessons can be gleaned from the OP12 experience to more effectively promote integration among GEF activities?*” The study was specially commissioned to understand how the experiment for integration in the GEF was been achieved through OP12 projects. Hence the explicit focus on multi-focality, synergies, win-wins, and trade-offs as conceptual aspects analyzed in the portfolio.

Lesson 1 – Quality at entry for IEM projects requires clear guidelines on GEF expectations for synergies, trade-offs, and “win-wins” with respect to GEBs

The study concluded that there was adequate evidence of integration in the projects analyzed to justify OP12 as a valid and important program for the GEF. It was noted, however, that issues related to quality of entry for some projects, an apparent

lack of strategic guidance of the OP and unclear guidelines for designing IEM projects may lead to failure in actual implementation of the projects. For example, evidence of synergies in global environmental benefits was reflected in most projects at pipeline entry, yet approaches to actually demonstrating and measuring the benefits were seldom considered. Indicators and baselines were also lacking for biodiversity, carbon, and land degradation trends, but the study noted that these could still be addressed during implementation.

In its conclusion from the overall portfolio assessment, the study noted that while OP12 was not redundant in the GEF, it will require more careful strategic prioritizing, improved quality of entry and improved approaches for monitoring and learning from IEM approaches. The pilot PMLR was therefore a timely opportunity to assess progress with implementation of the IEM approach, specifically as a means to combat land degradation and desertification.

3.1.2 Portfolio PMLR - Progress with IEM Implementation

As noted earlier (see Part 1, Section 1.3.2), only five of the OP12 projects were selected for the pilot PLMR to represent the range of contexts in which IEM is being implemented globally with GEF financing. The five projects also have high relevance for the overall objective of the PMLR with respect to the Land

⁵ GEF Office of Monitoring and Evaluation - Integrated Ecosystem Management Program Study, April 2005.

Degradation Focal Area, which is to assess progress with implementation of the IEM approach to combat land degradation and desertification in drylands. From the IEM portfolio perspective, all five projects include a combination of policy and legislative interventions, investments in local-level actions, capacity building, and institutional strengthening. It is therefore prudent to put the SILEM project, which was the only one visited during the pilot mission, into context of the other four projects in assessing GEF's catalytic effect.

It is clear, however, that in attempting to address the PMLR questions without visiting the other projects, no definitive generalizations can be made on application of IEM globally. Rather, emphasis is placed on lessons learnt (what's working and what's not), best practices (methods, tools, and approaches used), and progress toward achievements and impacts (as determined by indicators and monitoring protocols used), all of which are reported in annual project implementation reports and project publications. In accordance with the pilot PMLR objectives, observations from the assessment are presented in response to the following four questions:

- i. What are the drivers that generate catalytic effect?
- ii. How does the GEF's catalytic role influence the choice of activities to generate GEBs?
- iii. How is progress toward targeted IEM outcomes being tracked?
- iv. What tools and indicators are being applied for monitoring the IEM approach?

3.2 Drivers of the GEF's Catalytic Effect

3.2.1 *Linking policy and action at scale in land degradation and desertification affected areas*

Overall design and implementation of the five reviewed projects on combating land degradation through the IEM approach suggests that drivers of GEF catalytic effect are manifested at regional, national and local levels. At the regional level, the drivers are linked to natural resources extending across national boundaries, where integrated ecosystem management approaches must accommodate transboundary management needs. Lack of enabling conditions for transboundary collaboration is often a major impediment to integration of natural resource management at this level, which was targeted as a priority area for funding under OP12. In the Nigeria-Niger project, GEF financing was crucial for enhancing and harmonizing policies to facilitate effective decision-making on management of watersheds and land-use priorities in the cross-border areas.

Lesson 2 – Drivers of GEF catalytic effect on the IEM approach are manifested at regional, national, and local levels, and mainly in the context of linking policy and on-the-ground actions.

At the national level, drivers of catalytic effects are two-fold. First, government-driven decentralization policies and associated legislative and institutional changes enabled the shifting of authority over rural development

priorities from the Central Government to Provincial levels. As demonstrated in Burkina Faso, China, and Argentina, this included the introduction of frameworks for sub-national and local decision-making and adaptive management of natural resources. Second, financing mechanisms were created at national level for investment in sub-national priorities to address the rural development priorities.

Knowledge of these national level changes and developments was generally lacking at the grassroots level, leading to lost opportunities for improved management of natural resources. These two drivers of catalytic effect at national level therefore underpin the need for IEM, because they empower local governments and subsequently communities to take greater responsibility over their own livelihood and development needs. GEF financing was an important factor in the Government decision to prioritize investments that facilitate local level actions to improve livelihoods in while generating global environmental benefits from integrated management of production systems.

At the local level, the main driver of catalytic effect is the empowerment of communities to make decisions livelihood and development needs at micro-scale, which in most cases in village level. For combating land degradation and desertification, the IEM projects in general focus on community-driven processes (*bottom-up actions*) whereby communities decide on priority interventions for technical and financial assistance (*top-down actions*) from the government and donor partners to facilitate implementation of activities. Because management of natural resources is considered a priority for rural development by the Governments, communities are able to define sustainable land and water management interventions, especially in landscapes where land degradation and desertification effects are pervasive. With GEF financing, communities are mobilized to engage in the development process through consolidation of existing organizational structures, accorded the necessary institutional support, given access to training and skills development, and access to appropriate technologies and incentives. The GEF's catalytic effect on combating land degradation through the IEM approach also creates synergies for climate change adaptation and reduced vulnerability of local communities, and for improvements of biodiversity in production landscapes.

3.2.2 Potential for mainstreaming environment in poverty reduction and rural development

The IEM projects focusing on sustainable land management are generally linked to baseline projects that are associated with rural development and poverty reduction. Because of strong ownership of the development and poverty reduction measures implemented through the baseline projects, Government commitment to the IEM projects also tend to be strong. This commitment is an important driver of GEF's catalytic effect, which also enables the Government to demonstrate mainstreaming of environmental priorities at national level. In principle, lessons learned from these projects have potential to feed directly into development strategies that could benefit from budgetary allocations by the government as well as investments from bilateral and multilateral sources.

Lesson 3 – While IEM projects create opportunity for mainstreaming environment in development and poverty reduction at national level, GEF catalytic effect is difficult to establish in this regard.

However, the mainstreaming of environmental concerns into the development and poverty agendas can be very complex and difficult. The pilot PMLR has shown that while IEM projects create opportunity for mainstreaming, evidence

of GEF catalytic effect is difficult to capture. This can be attributed to difficulties with national level coordination and policy dialogue between different sectors and agencies on sustainable land management and cross-cutting environmental issues. Furthermore, adaptation of national policies does not automatically translate into local level implementation of policy reforms beyond the areas targeted

by projects where the necessary capacity is lacking and information flow is less effective. This means that efforts to link national level policy and local level actions through IEM cannot be easily replicated except by design.

It is likely that contribution of IEM to mainstreaming can only be achieved if this is addressed as a priority, and mechanisms identified during project design. In this regard, the mainstreaming of environment as driver of GEF catalytic effect is only manifested in countries like China where IEM is at the heart of a strategic partnership program between the Government and the GEF – i.e. the PRC-GEF Partnership to Combat Land Degradation in Drylands. The PRC government has essentially embraced IEM as the approach to combating land degradation and desertification in drylands, and for which the government is channeling major investments as part of the country's development strategy in the affected provinces and autonomous regions. GEF financing has played an important role in advancing the Government's vision, and could serve as an important driver for other countries. Burkina Faso is a GEF Country Program Partner (CPP), but the partnership was only established after the SILEM project was approved. It is therefore likely that mainstreaming is still a possibility although no direct link has been established between SILEM and sustainable land management projects funded under the CPP.

Options and best practices for mainstreaming can be based on identifying policy implications of poverty, vulnerability, and sustainable land management through (a) policy studies analyzing the linkages between poverty, vulnerability, and SLM, and on related policy implications. Such studies should also cover the potential role of community driven development approaches in lifting barriers to sustainable land management and to climate change adaptation, (b) consultation workshops to facilitate exchange between different sectors and other agencies with mandates and responsibilities in land and water resource management, agriculture, forestry and other aspects of climate change adaptation, and (c) coordination among the project provinces regarding all aspects of SLM critical to the success of the GEF pilot project components.

3.3 GEF's role in the choice of activities to generate GEBs

3.3.1 Enhancement of GEBs through IEM

The GEF influence on choice of activities to generate GEBs from IEM was driven primarily by objectives of OP12, which considered increased vegetative cover in production landscapes with the associated benefits in carbon sequestration and biodiversity. Moreover, GEF's strong emphasis on environmental protection contributed to a clear focus of project activities on direct linkages to improving natural resource management. The pilot PMLR has noted that IEM projects generally avoid overambitious targets, but rather strive to seek balance between GEBs and local development benefits. The choice of activities to generate GEBs is therefore also influenced by the participatory processes that address short-term benefits for the local livelihoods. The generation of GEBs is thus one of the catalytic effects that are driven by creation of local benefits, and can be up-scaled by appropriate project designs.

An important tool that is used to leverage GEBs from implementation of the IEM approach to combating land degradation is the investment in micro-projects. This was a major focus on IEM projects in the pilot PMLR, for which GEF financing played an important catalytic role. Because significant amounts of GEF

funds are specifically directed toward this activity as a priority, emphasis is placed on investing in micro-projects that addressed livelihood needs with directly linked to creation of multiple environmental benefits. In the case of SILEM project in Burkina Faso, GEF funding for micro-projects was complementary to investments made through the baseline CBRD project, with the latter targeted primarily at mainstream development activities such as provision of veterinary services.

Lesson 4 – Creation of multiple benefits from IEM is driven by activities with direct links to improved management of natural resource in landscapes where land is still under productive use and not degraded

One of the most striking observations from the pilot PMLR is that “win-win” situations are indeed possible and that trade-offs in land use could mostly be avoided. In other words, the creation of multiple environmental benefits in

the context of improving livelihoods is possible especially where the land degradation is not advanced to the extent that interventions must impose sacrifices on other ecosystem services. Because the IEM approach ensures that land management options are carefully weighed by communities in order to accommodate multiple needs, the potential for trade-offs and synergies are also taken into account. For example, applying soil conservation measures at an early stage of land degradation will reduce the risk of increased sedimentation from excessive run-off into water bodies. Similarly, resolving conflicts between herders and farmers by designating of corridors for livestock movement creates opportunity for increased vegetative cover, biodiversity conservation, and carbon sequestration in those corridors.

The avoidance or management of trade-offs is mainly driven by the negotiation support processes and structures that are created through the IEM projects. Such structures help to build trust and confidence in decision-making at community level, so that the need for maintaining a healthy and productive agro-ecosystem takes precedence over individual interests. Hence the crucial importance of GEF financing in facilitating grassroots level empowerment and ownership of interventions through the IEM approach.

3.3.2 Strengthening local capacity for GEBs

Because of its knowledge intensive nature, IEM requires experiential learning in order to fully harness the range of options for enhancing sustainability in production systems. At the grassroots level, much local knowledge already exists that can be easily applied with the creation of appropriate enabling conditions or empowerment. The potential for generating GEBs can be greatly enhanced by access to innovations that build on or reinforce existing local knowledge. This is one of the principles of IEM that is embodied by the GEF portfolio. Linking capacity building to community-driven priorities for sustainable land management can therefore strengthen the creation and maintenance of multiple environmental benefits.

Lesson 5 - Training and technical guidance in the context of actual implementation of IEM interventions enables communities to “learn-by-doing”, which increases the potential for GEBs

Most of the sustainable land management interventions in IEM projects need expert guidance for successful implementation by communities. Hence, the capacity building and technical guidance

demanding by communities are essential for implementing the IEM approach to combat land degradation. However, all training and expert inputs are provided in the context of actually

implementing SLM interventions so that communities “learn-by-doing” and are able to monitor and evaluate their effects. In the process, communities are increasingly empowered with knowledge and tools to become highly effective custodians of innovative practices that ultimately drive major transformations at scale. For example, the SILEM project in Burkina Faso has shown that:

- Communities which develop an integrated village development plan through a participatory process become increasingly vocal in seeking assistance for their development plans and goals, and more actively pursue their development objectives within and outside of the project context;
- Communities achieve increased capacity for their own development through hands on involvement in community planning and development;
- Empowered community implementation groups with increased development capacity will likely sustain themselves beyond project completion.

3.4 Monitoring of progress toward targeted IEM outcomes and impacts

3.4.1 Indicators and baselines

Project monitoring and evaluation at output and outcome level is very effectively demonstrated in the IEM portfolio based on project implementation reports submitted annually to the GEF Secretariat. In addition to reporting on progress toward achieving project objectives, PIRs also report on local development benefits such as measures of crop yield or income generated from marketing of natural resource products. In general, these performance measures are quite straightforward and adequate in the cohort of PIRs submitted annually, to the extent that they justify a more careful accountability through the application of a Land degradation Focal Area tracking tool. The pilot mission to Burkina Faso also provided a practical evidence of the feasibility for applying the focal area tracking tool as a means of enhancing portfolio level monitoring and assessment. The pilot PMLR therefore reaffirms and validates the LDFA Portfolio Monitoring and Assessment Tool (PMAT) that will be required by all projects financed under the focal area during GEF-5.

Monitoring and evaluation of IEM implementation also depends on assessment of baseline conditions for all relevant indicators linked to outcomes and outputs. The pilot PMLR observed some difficulties in availability of baseline information against which performance indicators are monitored. Only two of the five projects (Burkina Faso and China) scored highly satisfactory for baseline measurements, while others only indicated plans to conduct studies on the baseline conditions. This highlights the need to increase emphasis on appropriate and accurate baseline establishment for relevant indicators at the time of project endorsement. The PMAT design specifically requires that all relevant indicators be carefully assessed and documented during the project development, so that baseline conditions can be quantified or rated for monitoring changes during implementation.

The PMAT also includes a section on GEBs, for which indicators and baselines will be required at the time of project endorsement. A major challenge noted in the pilot PMLR, however, is the difficulty of measuring GEBs in production landscapes. This is mainly attributed to the dynamic nature of these landscapes as driven by the changing and multiple needs of communities. Most convention methods for

Lesson 6 – Because IEM implementation is primarily targeted at production systems that are often dynamic, measurement of GEBs is constrained by lack of reliable baselines and cost-effective methods for monitoring

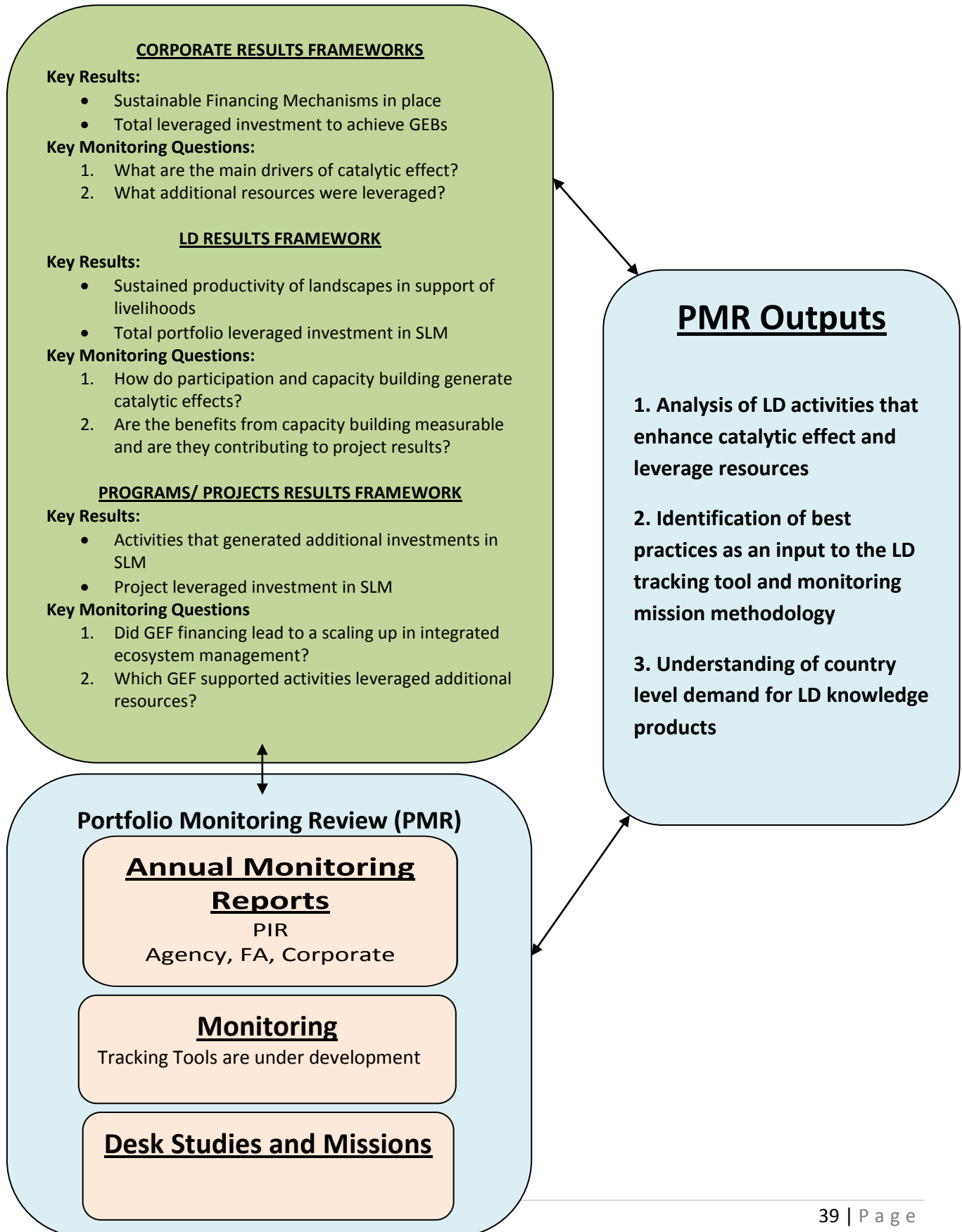
ecosystem monitoring do not accommodate such dynamic changes, and there is no evidence of reliable methodology being applied in any of the projects. Data generated by the SILEM project further demonstrated the

kinds of inconsistencies that can result for monitoring impact indicators on an annual basis. As described in section 2.3.2, regular and sound monitoring of indicators for GEB was difficult, costly, and interpretation of results was not meaningful. This does not in any way imply that the projects do not create GEBs. It is certain that despite variations in annual measures, the GEBs can accrue over a long periods as the ecosystem services improve with sustainable land management. This lesson highlights the need for practical approaches for project and portfolio level monitoring of GEBs in dynamic landscapes. GEF financing for IEM implementation should consider indicators that more appropriate accommodate the dynamic nature of production landscapes.

Tools and indicators for measuring ecosystem-level benefits of the IEM approach are also difficult to define. The pilot IEM projects do not present methodologies to measure integration or monitor and evaluate synergies between or among the focal areas. However, the general conclusions can be drawn that the projects were in line with the main strategic direction for OP12 by focusing on targeted capacity building for IEM and applying indigenous and/or innovative approaches to IEM using a combination of NRM approaches. Moreover, there is consistency in use of the concept of integration as applied to *management* and not to the ecosystem. This includes integration of management induced participation, co-operation, partnerships at multiple scales, and search for synergies. IEM projects aim at the achievement of integrated, synergistic impacts in terms of GEBs by striving for community participation and empowerment, genuine stakeholder involvement, project ownership, sectoral integration, enabling frameworks, and fit with country priorities.

3.5 Conclusions and Recommendations for future PMLR

Annex 1 – Generic Framework for GEF Portfolio Monitoring and Learning



Annex 2 – Description of IEM Projects included in the Pilot PMLR