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IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-53855)

ON A

GRANT

IN THE AMOUNT OF US$4.5 MILLION

TO BURKINA FASO

FOR A

SAHEL INTEGRATED LOWLAND ECOSYSTEM MANAGEMENT PROJECT

AUGUST 31, 2011

Environment and Natural Resources Management Unit
Sustainable Development Department
Western Francophone Africa 2 – AFCF2
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ABBREVIATIONS AND ACRONYMS

APL	Adaptable Program Loan
CBRD	Community Based Rural Development
CCIV	*Cadre de Concertation Inter-Villageoise (*Inter-Village Sub-Watershed Management Committee)
CDD	Community Driven Development
CDM	Clean Development Mechanism
CPAT	Provincial Commission for Land Administration *(Commission Provinciale de l'Aménagement du Territoire)*
CPP	Country Partnership Project
CVD	Village Development Council *(Conseil Villageois de Développement)*
CVGT	Village Land Management Committee *(Commission Villageoise de Gestion du Territoire)*
FM	Financial Management
GEF	Global Environment Fund
GEO	Global Environmental Objective
ICR	Implementation Completion Report
IEM	Integrated Ecosystem Management
IOI	Intermediate Outcome Indicators
ISR	Implementation Supervision Report
KPI	Key Performance Indicators
LIF	Local Investment Fund
M&E	Monitoring and Evaluation
PAD	Project Appraisal Document
PCD	Community Development Plan (*Plan Communal de Développement)*
PCT	Provincial Coordination Team
PDO	Project Development Objective
PGIE	Sub-watershed plan (*Plan de Gestion Intégrée des Ecosystèmes*)
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PNGT2	*Deuxieme Programme National de Gestion des Terroits*
UNDP	United Nations Development Program

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Burkina Faso

Sahel Integrated Lowland Ecosystem Management Project

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1. PROJECT CONTEXT, GLOBAL ENVIRONMENT OBJECTIVES AND DESIGN

1.1 Context at Appraisal

1. Burkina Faso is a landlocked West African country with more than 80% of its population living in rural areas. Rapid population growth at a rate of 3.1% per annum between 2000 and 2005 has led to increasingly higher demand for land for agricultural use and as a source of fuel wood and other wood products (e.g. building materials), which the majority of rural dwellers rely on for their livelihoods. Pressure on the natural resource base and the environment has been high and caused rapid degradation from deforestation (estimated at 10,000 ha per year), bush fires, overgrazing and unsustainable agricultural practices. Depletion of natural resources and environmental deterioration has adversely affected local livelihoods, especially of the poor. About 45% of Burkina's entire population lives below the poverty line, which remains a predominantly rural phenomenon.

2. In an effort to arrest and reverse natural resource degradation, the Government has developed a number of demand-driven strategies and plans that are managed by local communities and decentralized institutions.[1] A key part of the Government's decentralized rural development strategy is the three-phase National Community-Based Rural Development (CBRD) program that aims to alleviate poverty in rural areas by building local capacity to implement small investments to develop productive assets and/or protect natural resources.[2] The Sahel Integrated Lowland Ecosystem Management (SILEM) Project was designed to complement this program by introducing a landscape dimension and an Integrated Ecosystem Management (IEM) approach to local development planning. SILEM was prepared as a stand-alone project but with a strong linkage to the CBRD program to which it: (i) provided complementary GEF funding to the first and second CBRD projects; and (ii) was implemented through the CBRD institutional structures already in place.[3] SILEM's implementation phase, however, is not aligned with the first CBRD project (2000-2007) as it became effective only around the time of the Mid-Term Review of the first CBRD project.

3. SILEM was conceived as a long-term engagement aimed specifically at supporting the Government's efforts to address the deterioration of the country's natural resource base. SILEM's design focused on involving local communities in resource and ecosystem management, which was consistent with Burkina Faso's national environmental action plans and conventions. The project incorporated GEF principles, as described in GEF's operational program #12, by addressing the focal areas of biodiversity and land degradation, as well as interlinking IEM and community driven development (CDD). The project also fit in well with GEF's operational program #13 by supporting conservation and sustainable use of biological diversity important to agriculture.

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[1] The need to involve local communities in resource and ecosystem management is also reflected in the national environmental action plans and strategies of Burkina Faso as well as in decisions associated with the Convention to Combat Desertification (UNCCD), the Biodiversity Convention (CBD) and the UN Framework Convention on Climate Change (UNFCCC).

[2] The CBRD program when it was conceived was a fifteen-year initiative to be partially financed by APLs consisting of three five-year phases. The total cost of the first phase (2000-2007) was US$114.8 million, of which IDA financed US$66.4 million. The second phase of the program was approved on March 27, 2007 and is currently under implementation.

[3] The main difference in the components was related to the pilot components carried out under both projects. On one hand, the CBRD project financed a land tenure pilot activity, which was not included in the project design of SILEM, while SILEM's project design included a pilot activity focusing on partnerships for sustainable financing for environmental restoration and management which was not included in the CBRD operation.

4. SILEM sought to "increase the productivity of rural assets (labor and land) through the conservation and sustainable use of natural resources." SILEM was, thus, likewise consistent with the rural poverty reduction objectives of the Government's Poverty Reduction Strategy Paper (PRSP) that identified the sustainable management of natural resources as a major principle. The project was also a key element of the Bank's 2001-2003 Country Assistance Strategy (CAS) which identified SILEM "as a 15-year GEF-financed Adaptable Program Loan (APL)". The program was divided into three phases of five years each, of which the project under review is the first phase. The second phase was meant to consolidate the first phase experience while also extending the program to additional provinces and sub-watersheds. The third phase was intended to replicate the model nationwide. Funding for the second phase was not secured and, therefore, the project has been terminated for now; however the Government is currently exploring different options to ensure the continuation of SILEM's activities over the next 2-3 years (see section 2.5). The purpose of this ICR is to assess the results of the project against the objectives of the first phase – which, in practice, lasted six years (2004-2010) due to a one-year extension.

1.2 Original Global Environmental Objectives (GEO) and Key Indicators

5. The **Global Environment Objective**, as stated in the PAD, was the "sustainable conservation of biological and agricultural diversity and the rehabilitation of soil and water resources in targeted watersheds". The **Project Development Objective** in the PAD was to "improve the resource management practices in targeted sub-watersheds through an integrated ecosystem management approach". As stated in section F, the objective in the Grant Agreement, "to strengthen the capacity of rural communities to undertake an integrated management of their ecosystems, so as to reverse the degradation of their natural resource base, and thereby alleviate, in a sustainable manner, poverty and vulnerability," is not consistent with the PDO or the GEO in the PAD.

6. The project design, as outlined in the PAD, included seven **Key Performance Indicators** (KPIs) that would have been relevant to all three phases of SILEM, however their target values were for the project implementation period. To monitor implementation progress based on quantifiable outcomes and outputs during the first phase, the PAD also included nine **outcome/impact and output indicators** that were aligned with the seven key performance indicators of the program. **Six of the nine performance triggers** were also prerequisites for access to subsequent financing for phase 2. All but one of these triggers were taken from the list of performance indicators for the first phase of the project while the remaining one was taken from the list of performance indicators identified for all three phases.[4] The triggers are identical with the Key Performance Indicators included in the GEF Trust Fund Agreement.

7. Lastly, the PAD listed under Key Performance Indicators four "End-of-Program" indicators which aimed to measure the impact of the program on conservation, biological diversity and the rehabilitation of soil resources in targeted watersheds over the 15-year period with a first assessment planned to be carried out towards the end of this project. These indicators are part of the performance indicators in the GEF TF Grant Agreement summarized under one indicator: "Positive trend in an

[4] The formulation of the trigger "Number of sub-watershed IEM plans and/or micro-projects financially supported by global partnerships = 2" in the PAD differs from the performance indicator in the Grant Agreement: "Number of new global partnerships supporting IEM or carbon sequestration activities equals 2 in 5 years ".

aggregate index of plant and insect diversity, soil organic content, grass and tree biomass in three out of four project sites in 5 years." (An assessment of these indicators was carried out end of 2009 and is summarized in section 3.2.)

1.3 Revised GEO and Key Indicators

8. There were no revisions in the Global Environment Objective and key performance indicators.

1.4 Main Beneficiaries

9. The Project was designed to benefit rural populations living in the vicinity of selected watersheds in the four targeted provinces (Soum, Sanmatenga, Kourittenga and Kompienga), involving around 12,000 households in 120 villages.

1.5 Original Components

10. The Project included five main components: (i) Local capacity building for Integrated Ecosystem Management (IEM); (ii) Local Investment Fund for Integrated Ecosystem Management-Micro-projects; (iii) Institutional Capacity Building for Integrated Ecosystem Management; (iv) Building partnerships for sustainable IEM financing; and (v) Program Coordination, Administration and Monitoring/ Evaluation. The total project cost at the time of appraisal was US$4.76 million, of which GEF pledged to contribute US$4.5 million and the Government of Burkina Faso US$0.26 million.

11. ***Component 1 - Local Capacity Building for Integrated Ecosystem Management (US$1.03 million).*** The objective of this component was to strengthen the technical and organizational capacity of rural communities and municipalities to plan, implement and monitor IEM activities. More specifically, the project planned to provide funding for: (i) technical capacity building at the community level; (ii) the development of effective watershed management committees, and (iii) training of community groups and watershed associations in the use of various IEM tools.

12. ***Component 2 - Local Investment Fund (LIF) for IEM Sub-projects (US$2.08 million).*** The objective of the Local Investment Fund (LIF) was to provide resources to communities and provinces, under two separate windows, for: (i) financing village and inter-village (watershed management committee) sub-projects; and (ii) undertaking larger investment projects at the provincial level.

13. ***Component 3 - Institutional Capacity Building for Integrated Ecosystem Management (US$0.38 million).*** The objective of this component was to support institutional capacity building to promote the creation of an adequate policy environment for the adoption of IEM practices. The purpose was to provide training (information, negotiation and conflict resolution), equipment, and incremental operating costs to equip local, provincial and national institutions with the capacity to integrate IEM approaches in their development plans.

14. ***Component 4: Building partnerships for sustainable IEM financing (US$0.17 million).*** The objective of this component was to build capacity at local and national levels to mobilize national and international funds to address environmental and resource management issues of local, regional and potentially global significance. It would specifically seek to explore: (i) opportunities for partnerships recommended by the Kyoto Protocol and the Convention on Climate Change, and partnerships through the carbon trade markets (twinning, etc.); and (ii) mechanisms for supporting alternative sustainable financing mechanisms such as a desertification mitigation fund.

15. ***Component 5: Program Coordination, Administration and Monitoring/Evaluation (US$0.84 million).*** The objective of this component was to provide incremental funding to: (i) help finance the cost of project implementation incurred by the CBRD project coordination unit and the provincial teams; and (ii) adapt the M&E and impact assessment systems of the CBRD project to incorporate the added requirements of SILEM, with emphasis on strengthening the environmental and natural resource components of the M&E system of the CBRD project.

1.6 Revised Components

16. The components remained unchanged during implementation. However, due to difficulties under Component 4 in finding partners that were interested in investing in Clean Development Mechanism (CDM) projects, recommendations were made during the Mid-Term Review (MTR May 2007) to revise the component and the respective indicators. But this was never formalized (see section 2.1).

1.7 Other significant changes

17. Effectiveness and closing dates. The project was approved by the Bank's Board of Directors on June 22, 2004. However, it became effective only on December 22, 2004, mainly due to a number of effectiveness conditions, which could not be met by the Government on time.[5] The Project's closing date was extended in May 2009, with the Country Director's approval, from June 30, 2009 to December 31, 2010. The main reason for postponement of the closing date was delays in disbursement following climatic constraints. Low rainfall in 2006 and 2008 affected the management of many micro-projects in territorial and water catchment areas. As a result, the implementation of the micro-projects had to be postponed to 2009 and 2010. The extension of the project provided an opportunity for the project team to allow the consolidation of lessons learned, to ensure the sustainability of activities, and to ensure good linkage with other programs (for instance, the GEF supported Country Partnership Project (CPP) on Sustainable Land Management). As part of SILEM's fifteen-year program, these activities had been initially planned under phase 2 and 3 but could not be carried out in the upcoming years given that the required funding had not been secured.

18. GEF financing. In order to meet the high demand for LIF micro-projects -- which exceeded, by far, the initial projection of 480 micro-projects for the entire 5-year project period -- the Government requested a reallocation of project funds.[6] The proposed reallocation was expected to increase the budget for the LIF from US$2.0 million to US$2.4 million by: (i) using all unallocated funds and (ii) reducing the resources allocated for local capacity building for IEM and national capacity building for carbon finance (Components 1 and 4). The rationale presented for these cuts was that technical training for the communes had often been integrated into LIF-funded activities while the scope of activities under the fourth component had been reduced. Since the amount exceeded the 5 percent threshold, the reallocation had to be – and was -- endorsed by the Regional Vice-President.

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[5] At the time of granting the extended period on November 9, 2004, the remaining documents still missing for meeting the General Conditions [Section 12.04] were (b) the initial deposit of CFAF 20 to be made to the project account and (b) the ratification of the legal agreement and issuance of the legal notice by the "*Cour constitutionelle"*. [See November 9, 2004, letter from David Craig to Ministry of Finance and Budget].

[6] Note that the target of 480 micro-projects was based on the project designers' assumption that communities would mainly select large-scale sub-projects which were identified in the watershed management plans and available under the provincial window (between US$35,000 and US$150,000) of the LIF. During project implementation, the communities selected mainly IEM activities available under the smaller-scale village and inter-village window (< US$35,000) of the LIF. Therefore, more activities were carried out than initially planned.

19. Institutional setting. As initially planned, SILEM focused on providing training to rural communities, community organizations (in particular the Village Land Management Committees (CVGT) and the Inter-village Sub-watershed Management Committees -- CCIV) and municipalities. Following the local elections for the municipal councils of the 302 newly created rural communes in 2006, the newly elected councils replaced the CVGTs by Village Development Councils (*Conseil Villageois de Developpement - CVD*), whose mandate included contributing to municipal development plans and promoting local development in the village. It took about a year to formally elect the CVDs. Once in place, previous CVGT members that were taken over by the CVDs were able to continue working with the project. However around one third[7] of new CVD members had to be trained again, which in turn led to some substantial implementation delays, notably regarding the micro-projects in 2006 and 2007.[8]

20. Project Implementation Unit. SILEM was managed at the national and deconcentrated level by the same Project Coordination Unit (PCU) and Provincial Coordination Team (PCT) as that for CBRD. At the national level, one staff member of the CBRD program was nominated by the Government as the national coordinator while, at the provincial level, the PCTs in the provinces targeted for SILEM intervention were reinforced by addition of a team member specialized in integrated ecosystem management and responsible for the supervision of the implementation of SILEM's work program. These institutional arrangements were reviewed during SILEM's Mid-Term Review which recommended the recruitment of a technical assistant to the national coordinator to strengthen the project's technical monitoring function and its focus on lessons learned and synergies with other programs and partners. In addition, under the second CBRD project (2007-2012), the deconcentrated project structures of CBRD were placed in regional coordination units. Given these changes of CBRD's institutional structure, it was decided during the Mid-Term Review to retain SILEM's staff directly in the four project provinces to ensure close support to the villages while keeping the operational cost low. At the same time, the four agents were given greater responsibility in activity planning, data collection and preparation of progress reports – tasks that had previously been carried out by CBRD's Monitoring and Evaluation Specialist.

2. KEY FACTORS AFFECTING IMPLEMENTATION AND OUTCOMES

2.1 Project Preparation, Design, and Quality at Entry

Project preparation

21. Project preparation took about three years, from 2001 to 2004. The Government began to prepare the Project in March 2001 with the launching of a number of technical and scientific studies.[9] These

[7] Based on estimates by the PIU.

[8] Long delays in setting up the CVDs were encountered in the Province of Soum in particular and, as a result, most of the training of the new members of the CVDs was not carried out until the beginning of 2008.

[9] The studies included: (i) an Inventory of the Sahel, Central and East lowland of Burkina Faso: Results & Analysis - Final report (INERA, December 2002); (ii) a North-South Sustainable Financing Partnership Alternatives for Local Development and Natural Resource Management - The Case of the Sahel Countries: Senegal, Mali, Burkina Faso, Niger – Final report (Lewis, Chantal September 2002); (iii) an Inventory of Agro-biodiversity at the level of the Sahel lowland ecosystems, of the

studies focused on GEF priority areas (biodiversity, climate change, international waters and land degradation), and their scope of work was in line with GEF eligibility criteria so as to be able to qualify for GEF funding. Most of the work was commissioned to local consultants and institutions. However, weak management of the studies by some of the institutions led to a two-year delay in finalizing them. The overall input of the studies on project design was mixed. The scientific work on the characterization of lowlands and the GIS-based natural resource map provided an important input for the identification of the project sites. In retrospect, the work on sustainable financing mechanisms carried out to inform the preparation of the fourth project component on sustainable IEM financing was too general.

22. Given these delays, the US$350,000 in preparatory grant funding, which had been awarded to the Government by GEF, had to be extended twice. Thus, the initial intention to closely align SILEM's implementation phase with the first CBRD project did not materialize, as SILEM became effective only in 2004. In hindsight, however, this proved to be advantageous for SILEM as it was able to capitalize on local institutions that had been put in place by CBRD and build on mechanisms that had been tested for channeling investment funds to local organizations.

Adequacy of Government's commitment

23. SILEM enjoyed Government of Burkina Faso's strong commitment and ownership throughout project preparation and design. The Project was prepared under the leadership of the Ministry of Agriculture, Water and Fisheries and the Ministry of Economics and Finance with broad participation by several other Ministries/Directorates (e.g. the Ministry in charge of Environment, the Ministry of Animal Resources, and the Ministry of Scientific Research). A Technical Monitoring Committee was set up (comprising the above mentioned Ministries) that allowed for effective institutional coordination and close involvement of the Government in the design of the Project.

Key elements of project design

24. Different project design scenarios were considered at the preparation stage.[10] Though SILEM was not blended with the CBRD project as initially planned, the complementary implementation of SILEM was an appropriate decision as it allowed the Project to be more cost efficient while having a greater impact on sustainable resource management in the pilot provinces. At the time of project design, the concept of a GEF window funding an IEM activity together with a rural community-driven development (CDD) operation was innovative, as this GEF window was a relatively new and innovative type of intervention. Given SILEM's focus on ecosystem management (addressing soil fertility, biodiversity and desertification challenges), the Project also assisted the Government in the implementation of key national environmental strategies and action plans.[11]

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central, east and west highlands of Burkina Faso (Zongo, Jean-Didier, April 2002); and (iv) the current status and potentials of GEF activities in Burkina Faso – Final Rapport (Ouadba, Jean-Marie, et. al., October 2001).

[10] One scenario entailed preparation of a regional program combining World Bank and GEF resources covering Burkina Faso, Mali, Niger and Senegal. However, due to difficulties encountered in obtaining an agreement from all four countries, it was decided that designing national projects in each of these countries, with the possibility of some form of regional coordination, would be a more feasible option. Another scenario considered was to combine the project with the Burkina Faso Partnership for Improved Management of Natural Ecosystem (PAGEN) but the different sets of tools and institutions employed by PAGEN and the World Bank suggested that the combined program would be too complex to implement.

[11] SILEM contributed to the objectives of Burkina Faso's national environmental actions plans, including the National Desertification and Mitigation Action Plans (by encouraging participatory and decentralized planning), the National Strategy and Action Plan for Biological Diversity (by supporting the search, inventory and collection of agricultural and forestry species for their conservation), the National Soil Fertility Management Action Plan (by promoting the extension of

25. The project design benefited from the experience and lessons learned from the CBRD program. The key lessons integrated into the Project were the importance of: (i) using a CDD approach combined with substantial capacity building to ensure effective natural resource management; (ii) a long-term commitment (reflected in the programmatic approach taken) to generating global environmental benefits; (iii) building on local decentralized structures to ensure institutional sustainability; and (iv) properly tailoring technology and incentives for their application to community capacity.

Assessment of Project design

26. SILEM's Project Development Objective (PDO) of "improving the resource management practices in targeted sub-watersheds through an integrated ecosystem management approach," as stated in the PAD, was and remains highly relevant to supporting the Government's commitment to decentralization, local empowerment and decentralized natural resource management.

27. Project Components.The *first three project components* were designed as complimentary pillars of a sustainable IEM approach, The core of the project, namely Component 2 was well designed and highly effective. While Components 1 and (local capacity building and institutional capacity building for IEM) could have been merged it appears that the team figured out how to implement the project without being constrained by the 2 component design, but budgeting difficulties appeared during implementation because of the overlapping nature of these first and third components. In retrospect, it would have been more effective to have merged both under a single comprehensive IEM capacity building component with several subcomponents. A similar conclusion was drawn by the CBRD project that merged both components under CBRD II.

28. The design of the *fourth component* (mobilizing national and international funds, in particular by tapping into the Carbon Fund) was not well developed and too ambitious in view of its expected results and available resources. It is however worth mentioning that the project design at the time of preparation was quite innovative and far sighted to even consider such an activity at the time. The fact that it did not materialize is not of much consequence. A key expected result under this component was the preparation of two projects that would be financed through international funds (e.g. the Clean Development Mechanism - CDM). However, the preparation team did not pay sufficient attention to the complexity of such initiatives for which private investors needed to be identified and technical issues (e.g. land tenure security aspects, M&E mechanisms etc.) needed to be worked out. The PIU did however manage to identify one potential plantation project, but did not have sufficient resources to carry out the analytical work required for preparing such a project (i.e., elaborating the evaluation methods for carbon capture and the sequestration amount).[12] At the time of project design, the international funding mechanisms based on the Kyoto protocol (i.e, Carbon Funds) were not yet well developed, which helps to explain the weak design of the component. In retrospect, a more in-depth assessment of the prerequisites for CDM projects would have led to a more realistic design of this component which could have been limited to knowledge sharing and sensitization on international funding mechanisms - as was appropriately suggested by the Bank team during the Mid-Term Review. The weak design of this component is also reflected in the costing table, in which only a global envelope was proposed for this component.

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innovative technological packages) and the National Action Plan for the Convention on Climate Change (by promoting the rational management of natural resources).

[12] One of the main outputs under this component was the preparation of a project note which was prepared jointly with the Association of Mayors of Burkina Faso for the plantation of 10 000 ha of "d'*Acacia sénégal"* in 82 communes in 5 regions.

29. The design of the *fifth component* (program coordination, administration and M&E) turned out to be impractical because it was difficult to integrate SILEM's M&E requirements into the already existing M&E system and processes of CBRD, despite the budget available at SILEM to pay for the proposed additional CBRD services. As a result, SILEM established its own M&E system but with little capacity support until after the MTR when some of these design flaws were addressed and an additional staff member was recruited.

Assessment of risks

30. The PAD identified the following risks: (i) insufficient Government commitment to decentralized decision-making and resource transfer to rural communities; (ii) low-priority concern among communities about resource degradation; (iii) implementation risks for micro-projects due to delays in the availability of funds; (iv) lack of qualified service providers and enterprises; (v) insufficient level of commitment by regional and provincial authorities; and (v) lack of administrative support by the CBRD project due to possible implementation delays of the second CBRD or even the cancelation of the second phase. On the whole, these risks were realistic and the risk mitigation measures were appropriate. However, three risks materialized that had not been anticipated. First, the implementation of the LIF was not affected by delayed funding but by the impact of adverse climate effects, which resulted in a postponement of the micro-projects to 2009 and 2010. Second, the Government's commitment to decentralization led to important changes in the country's sub-national administrative system; while these reforms strengthened local empowerment, they constituted a risk for project implementation given the time required for the new institutional set up to begin functioning and for key partners for SILEM (e.g. the CVDs) to be trained again in the planning and management aspects related to the LIF. Third, the lack of private investors for CDM projects had not been anticipated as a risk but posed a major constraint for the development of partnerships for mobilizing international funds. A more careful analysis of the capacity and availability of private investors for CDM projects would likely have helped to better anticipate the outcomes and associated risks as well as needed mitigation measures, though carbon financing was a complex area with relatively little funding and limited capacity to develop such projects at the time of design of the project. .

2.2 Implementation

31. The implementation of SILEM was **positively affected by various factors**, such as:

32. Government's continuous support. At the national level, the Government of Burkina Faso maintained its high interest and provided support throughout project implementation, as reflected in the US$0.5 million in total counterpart contribution, paid in a timely way during project implementation. (Most projects in Burkina Faso face significant challenges in obtaining timely counterpart funding.) Throughout implementation, the technical services of the Ministries of Agriculture, Environment and others, as well as the decentralized services, have facilitated the selection of the sites and management of the LIF, as well as formal validation of the sites to ensure land security.

33. Implementation capacity of SILEM. Though the implementation of SILEM was not fully aligned with the CBRD program, the complementarity between SILEM and the CBRD Project allowed SILEM to place its four staff members in the *Provincial Coordination Teams* and to capitalize on the network created with local institutions and administrations already involved with CBRD. The Project benefited

from the experienced staff of the CBRD Project and most supervision missions were carried out jointly for both projects to ensure that synergies and complementarities were further strengthened.

34. High demand created for IEM activities. The demand for IEM activities financed from the LIF increased exponentially during project implementation, from 86 micro-projects in 2006, when the LIF became operational, to 1793 in 2008 and 2971 in 2010.[13] The successful implementation of IEM activities was attributable to thorough participatory assessments that ensured ownership by and high relevance for beneficiary communities. In addition, the "demonstration effect" of successful micro-project outcomes increased the demand for IEM activities both within these villages as well as in neighboring villages.

35. The following **factors hindered the smooth implementation** of the operation: (i) the installation of the new municipal councils following the elections in 2006 and the retraining of some of the CVDs; (ii) initial delays and methodological difficulties in carrying out the impact assessment (see the next section); (iii) the difficulties in identifying a partner for the CDM project; (iv) difficult administrative coordination of the watershed plan in the cases when the watershed is shared by several provinces which are in separate regions[14]; and (v) the unforeseen flooding (for example at the dam of Kampelcezougo (Kouritenga), the lowland of Soalga (Kouritenga) and the lowland at Foulla (Sanmatenga)), resulting in severe damage and degradation of several sites that were supported by SILEM.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

36. Results Framework. The PAD includes a log frame (used prior to the Bank's introduction of the Results Framework format) that contained a comprehensive set of *outcome indicators* (linked to the PDO objectives) and *output indicators* (for each project component). With the exception of one outcome indicator,[15] all Key Performance Indicators included measurable targets. However, several shortcomings in the log frame affected the measurement of the project indicators: Despite the prolonged project preparation, the log frame lacked baseline data and annual targets. Some of the outcome/impact indicators were either not well defined or inappropriate. The point system for two of the output indicators in the English version of the PAD was internally inconsistent (as the points did not add up to the total) and there were discrepancies between the point system in the log frame of the English and French versions of the PAD. Inconsistencies also existed in the formulation of indicators between the PAD as well as in the Grant Agreement.[16] There were also minor differences in the formulation of the indicators between the French and English version of the PAD – the English version of the PAD is used for the purpose of the ICR.

[13] Figures were provided by the PIU.

[14] This was the case of the watershed that was shared by the Province of Kouritenga and Ganzourgou and by Kompienga and Koultelgo.

[15] The PDO1 indicator *"% increase in index measuring comprehension and adoption of IEM approach by targeted communities = X*" did not include a target value.

[16] The output indicators "*Degree of functionality of the CCIV, as measured by point system = 9 per Province or 36 altogether*" differed from the formulation in the GEF TF Grant Agreement " *Number of functional inter-village councils for sub-watershed management issues, as measured by point system defined in the PIM equals 4 in 5 years.*" Likewise the output indicator "*Number of sub-watershed IEM plans and/or micro-projects financially supported by global partnerships = 2*" differed slightly from the performance indicator in the GEF TF Grant Agreement "*Number of global partnership supporting IEM or carbon sequestration activities equals 2 in 5 years*."

37. Impact Evaluation. The impact evaluation (based on the End-of-Program indicators) was constrained for several reasons: First, there were delays in finding a service provider to carry out the evaluation. As a result, the baseline values were established only in late 2006, a few years after the project started, allowing a shorter observation period of three years (2006-2009) than originally intended. Second, the evaluation was constrained by a small budget (limiting the number of samples that could be assessed). It is also worth noting that as project interventions were determined through a demand-driven participatory process, project sites and thus baseline values could not have been predetermined and impact evaluation became a difficult undertaking

38. Similar to the End-of-Program indicators, the baseline for the PDO 1 indicator was established two years late and the budget was constrained, permitting the team to conduct only a survey on a household level and not a community level. In addition, the methodology for assessing the PDO1 indicator was never provided in project design or during implementation. However, the PIU did develop a methodology to assess the adoption of technologies and techniques used by farmers through two simplified household surveys.

39. Project Monitoring. Despite the failure to adapt the M&E and impact assessment systems of the CBRD Project to the added requirements of SILEM, the M&E system adopted by SILEM proved to be functional and captured the implementation of Project activities accurately and in a timely manner. SILEM's output indicators were closely monitored by its PIU; information on technical, physical, and financial progress of SILEM project sites was collected regularly and documented in the CBRD's trimestral and annual reports. However, less attention was paid to the monitoring and evaluation of the PDO indicators as the results of the household surveys were not assessed in the reporting documents.

40. On the Bank's side, the main challenges in monitoring progress towards the achievement of project objectives was the choice of inappropriate indicators established during the design phase that made it difficult to measure SILEM's impact. Guidance was provided by Bank Management to focus on the six performance indicators included in the GEF TF Grant Agreement,[17] which were inserted into the 2006 ISR but without any measured values. The ISRs also lacked one of the key performance indicators ("*Number of sub-watershed IEM plans and/or micro-projects financially supported by global partnerships = 2")*.[18] Actual values were included in the ISRs starting in 2007 but at times were not consistent with the point system of the indicators as outlined in the PAD.[19] Initially, the Bank team also included the "End-of-Program" indicators in the ISRs but decided in 2009 to take them out again due to a lack of data. Given the difficulties in monitoring these indicators, there was an agreement between all involved parties, though not formalized, to discontinue the monitoring of the "End-of-Program" indicators. In addition, the Bank team failed to monitor the PDO1 indicator and to revise it at the beginning of project implementation. The information collected by two household surveys which provided information related to PDO1 was available but not reported in the periodic supervision reports.

[17] See ISR 12/29/2005

[18] The fourth project component was supposed to be monitored through two indicators, one of which was also included as a Key Performance Indicator in the GEF TF Grant Agreement ("*Number of global partnership supporting IEM or carbon sequestration activities equals 2 in 5 years")*. However, only the second indicator "*Number of new initiatives developed even though not all funded = 5*" of the fourth component was inserted in the ISRs.

[19] For instance, the KPI "Degree of completion for the sub-watershed IEM plan" is measured by a point system [a total of 16 points could be achieved] while the 2009 and 2010 ISRs stated "100" as "progress-to-date" which refers to the 100% accomplishment of the indicator.

2.4 Safeguards and Fiduciary Compliance:

41. Following the environmental and social assessment, the SILEM project was assigned a B environmental classification. Two safeguard policies were triggered: (i) OP 4.01 (Environmental Assessment), and (ii) OP 4.12 Involuntary Resettlement. The respective safeguard frameworks (Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF)) were prepared and disclosed according to Bank policy.

42. Compliance with **safeguards** was monitored during three supervision missions and assisted the team in establishing an improved screening process for micro-projects. Based on the ESMF procedures, which defined how micro-projects should be screened for potentially adverse social and environmental impacts, the CBRD project and SILEM strengthened the screening process in 2006 by introducing screening criteria for micro-projects in the new co-financing agreement with the CVGTs.[20] Additionally, in the case of micro-projects that may entail acquisition of land by the community a record of the agreement ("*process verbal"*) between the involved parties was required. These improved processes made it possible to identify activities with potentially adverse environmental and social impacts, as well as to anticipate mitigation measures for micro-projects posing an environmental and/or social risk. SILEM's and CBRD's improved screening process was presented at a training workshop organized by the World Bank in Niger in 2010 and was recommended for adoption to other project teams in Burkina and elsewhere (Niger, Benin and Togo).

43. OP 4.12 was triggered due to SILEM's activities restricting people's access to natural resources within protected areas. However, the PAD specified that the Project would not displace people involuntarily. [21] Environmental and social mitigation measures were implemented to compensate individuals, households and communities for land use changes or voluntary handing over of land. Compensation was provided in form of compost heaps, stone edging, training on the "zaï" technique[22], improved fire stoves, etc. The compensation measures increased the motivation of all participants involved in the micro-projects, (including the people affected by the project), thereby contributing to the sustainability of the associated investments. The 2009 Environmental and Social Audit observed that, for some investments, the respective compensation payments had not been made; this was mainly attributable to a poor understanding of national and Bank environmental and social safeguards policies by the different agents/stakeholders involved. Based on these findings, extensive training and workshops were held to instruct regional coordination units and other actors regarding the completion

[20] SILEM identified a number of micro-projects that constitute the "nomenclature" for the eligible activities funded by the LIF. On the basis of this "nomenclature", the micro-projects are classified in two categories: (1) Category 1 groups the micro-projects undertaken by the CVDs and where the implementation is done by individuals or households on their private property but where the environmental and social profits are for the benefit of the community. This category of micro-projects is not subject to environmental and social screening procedures. (2) Category 2 groups the community micro-projects which require the acquisition of property either for private or community usage. These types of micro-projects can cause restricted access to at least part of the project site. In this case, the screening criteria applied and a verbal process on the transfer of the proposed investment site is signed between the parties. (Audit Environnemental et Social du SILEM, 2009).

[21] PAD, pg. 26.

[22] Zai is a traditional land rehabilitation technology invented by farmers in Burkina Faso to rehabilitate degraded drylands and to restore soil fertility to the benefit of farmers living in drylands. The use of the zai technique produces higher grain yields, particularly on highly degraded sandy soils. (INWENT/IFPRI/NEPAD/CTA, Conference Paper No. 10, The Emergence and Spread of an Improved Traditional Soil and Water Conservation Practice in Burkina Faso, December 2003)

and usage of the safeguard forms when applying for micro-projects. As a result, the cost of compensation measures had to be factored into the micro-project budgets, and the screening criteria form for micro-projects was mainstreamed into the application procedures for and the financial management of the micro-projects (i.e., they are a prerequisite for receiving funds from the LIF).[23] Nonetheless, some challenges remain, namely: (i) designing a mechanism to monitor the implementation of mitigation measures; (ii) more systematic consultation processes about compensation issues with all stakeholders at community level prior to the submission of a project proposal to the LIF and (iii) documenting the implemented mitigation measures in the monitoring reports of SILEM.[24]

44. All **Financial Management** (FM) functions were carried out by CBRD staff, including reconciliation of accounts, contracting of external audits and procurement processing.[25] Financial reports were regularly carried out and audited by independent consultant firms with no major issues being identified throughout project execution. Review of financial management practices (including financial accounting and reporting, flow of funds arrangements, etc.) was conducted periodically by a Bank financial management expert who reported FM as Moderately Satisfactory for 2007 and 2008, while the ISRs reported a Satisfactory rating for FM for the duration of the project, creating a disconnect for the 2007/2008 periods. Regular procurement reviews were carried out jointly for the CBRD and SILEM.

45. **Disbursement**. The Project disbursed 100 percent of the GEF proceeds. Funds were disbursed more slowly than planned over the first three years (the disbursement lag was at 30% in January 2007) and this was part of the reason that the Project was downgraded from Satisfactory to Moderately Satisfactory in 2007.[26] However, disbursements increased substantially with almost all funds spent at the time of the project closing and the Project was rated Satisfactory for the remaining years.

46. **Procurement** was rated Satisfactory throughout project implementation in the ISRs.

2.5 Post-completion Operation/Next Phase:

47. Operation and Maintenance: According to the technical and financial audit, around 83 percent of the subprojects (based on 497 micro-projects selected out of 1793 carried out between 2006-2008) were judged to be of good quality and 15 percent of medium quality.[27] Furthermore, recognizing that SILEM will not be continued as initially envisaged, the Project trained and established Management Committees to ensure the functioning, maintenance and supervision of all investments. Whereas the members of the Committees work on a voluntary basis, there is a risk regarding their motivation over the medium term given that revenues from most investments are expected in 2-5 years. The Project intended to provide some income generating activities for the short term, but only a few Committees could benefit from this given the limited funding available. One unique operational arrangement was made by the commune of

[23] Mission combinée de revue à mi-parcours de la deuxième phase du PNGT2 ou CBRD II et de supervision du SILEM, 22 février au 6 mars 2010.
[24] Mission combinée de revue à mi-parcours de la deuxième phase du PNGT2 ou CBRD II et de supervision du SILEM, 22 février au 6 mars 2010.
[25] An accountant was hired to reinforce the financial and administrative service of CBRD for SILEM.
[26] In addition, the first and third capacity components were downgraded from Satisfactory to Moderately Satisfactory in 2006 due to the local elections in 2006 that resulted in delays in carrying out the training programs.
[27] However, an additional assessment planned in 2010 to cover the remaining years of project implementation could not be carried out due to lack of funding.

Kompienga, which funded the purchase of a motorized pirogue (boat) with SILEM's support to control the restricted fishing areas or "frayères" that are monitored by the village communities.[28] Most communes that had also worked with SILEM made efforts to continue funding environmental natural resource management (ENRM) activities (such as the development of feeder roads, the establishment of a botanical conservatory, etc.) through the CBRD project.

48. Sustaining reforms and institutional capacity. Given the discontinuation of SILEM after the first phase, during the last years of project implementation, the PIU and bank team focused on sustaining the results that had been achieved thus far. There are strong prospects of sustainability at SILEM's project sites given the positive creation of awareness among the participating beneficiaries and their commitment to maintain the sites.[29] Training and awareness regarding IEM has also occurred at the level of the technical services that have shared their experience with their respective Ministries. Some concrete evidence exists that activities included in the sub-watershed plans ("*Plans de Gestion Intégrée des Ecosystèmes* (PGIE)") continue to be included in the Commune Development Plans ("Plan Communal de Développement"- PCDs). A key success of SILEM was the formulation of land use rules with the local authorities, which were translated into written contracts. These permitted project sites to be farmed by an individual or the community and the benefits thereof retained. The successful process in establishing land security for the investment sites caught the attention of the *Directions Géneralé du Foncier Rural et des Organisations Paysannes (DGFROP)*, which studied the experience of SILEM as it prepared the National Policy for Rural Land Tenure [30]

49. For some investments, however, prospects are at risk in the absence of further support. For instance, land has been demarcated and land titles were issued for hunting sites, but without further investments in the tourism infrastructure at the sites it is less likely they will generate revenues. Also the success rate of the reforestation projects was estimated at 40%[31] due to damage associated with animal encroachment and dryness; this rate, however, is consistent with the experience in other reforestation projects in Burkina Faso.

50. Follow on Operation. As noted above, SILEM was designed to support each of the three five year phases of the CBRD Project. Whereas all actors involved in SILEM (local governments, Bank, GEF and beneficiaries) highlighted to the ICR team the important local benefits generated by the Project and expressed great interest in a follow-up operation, no funding could be mobilized at the moment to ensure continuation of the program in the immediate future. GEF's expected financial support to the proposed phases 2 and 3 of the operation has not yet materialized since utilization of the resource envelope under GEF-5 replenishment (US$ 9.6 million) is still being worked out. These funds will be available to all national institutions and actors (including SILEM) that submit eligible project proposals. However, it is also important to note that the IEM approach continues to be strongly promoted and

[28] It is noteworthy that the commune of Kompienga was able to fund this activity as it collects higher tax revenues than most other communes. A key source of revenue for the commune is the electricity company that produces hydro-electrical power from the dam of Kompienga.

[29] Both, the beneficiary assessment and the technical and financial audit highlighted the beneficiaries' strong commitment to the micro-projects and well as the good maintenance of the investment sites, suggesting the investments will be largely sustained. (Etude sur l'appréciation des actions du SILEM par les bénéficiaires, Octobre 2009 and Evaluation de l'exécution technique, financière et de la passation des marches des conventions de cofinancement SILEM/PNGT II 2006, 2007 et 2008, Janvier 2009)

[30] Based on discussions with the PIU.

[31] This means that 40% of the trees planted had survived three years after planting.

implemented in Burkina Faso through the mainstreaming that has and is taking place. IEM is being adopted as an important tool in the second generation CBRD project and is also being implemented through projects supported by other development partners as well. Moreover Burkina Faso has a very strong history of developing and using IEM and it is among the core tools for improving livelihoods in the country-side. Among the potential options that could also materialize in the medium term are the following:

- Given Government's strong commitment to rural development, it is likely that a majority of its future programs will be in rural areas with an increasing focus on adaptation to climate change. Synergies could be explored with these projects that should be able to build on SILEM's experience.
- Opportunities could emerge to integrate SILEM's experience in the Forest Investment Program (FIP) for which Burkina Faso was approved as a pilot country. With the support of the World Bank and the African Development Bank, the Government of Burkina Faso is currently in the process of preparing its strategy and priority areas of intervention to be funded by the program. The FIP seeks to scale up the experience and lessons learned from different programs that are underway, including SILEM's experience in community and municipal forest management (e.g. the identification and the implementation of community micro-projects through financing mechanisms).

3. ASSESSMENT OF OUTCOMES[32]

3.1 Relevance of Objectives, Design and Implementation

51. The PDO continues to have high *overall relevance* considering that it is geared towards sustainable natural resource management in Burkina Faso – a key element of the country's decentralized rural development strategy (as indicated in the Policy Letter for Decentralized Rural Development). The Project's *global objectives, design components and implementation* activities remain fully consistent with Burkina Faso's national environmental strategies and also fit well with the Bank's Country Assistance Strategy (CAS). The project design and implementation also offered other partners (e.g. IFAD) the opportunity to test the soundness of environmental and watershed management techniques. Furthermore, the project's conceptual and technical innovations in sustainable land management practices were commended by GEF, which also noted that SILEM's experience would add value to GEF's monitoring and learning portfolio under the Operational Policy No. 12 on IEM as well as its Land Degradation Focal Areas Strategy.[33] Given that SILEM's approach, which was relatively untested in the context of sustainable land management, especially in Africa, it is noteworthy that the PIU was invited to participate in WBI's African country network for three years to share its experience and to participate in the knowledge platform on sustainable land management and natural capital.

3.2 Achievement of Project Development Objectives

[32] As mentioned in section 1.2, the assessment of the project's outcomes is based on its PDO and key performance indicators contained in the PAD [See Annex 1].
[33] GEF, Pilot Mission to the Government of Burkina Faso/WB/GEF project SILEM, Phase I, October 2010.

Rating : Satisfactory

52. The limited information available through the PDO indicators makes it difficult to be categoric in assessing the achievement of the project's objective (" *to improve the resource management practices in targeted sub-watersheds through an integrated ecosystem management approach*"). However given that the project developed and promoted IEM planning and management tools, built local capacity to support an IEM approach and created inter-village cohesion centered on a common interest in the protection of shared watersheds, the project directly contributed to meeting the PDO. The End-of- Program indicators and the two PDO Indicators demonstrated the following achievements:

- **A positive trend in an aggregated index of plant and insect diversity, soil organic content, grass and tree biomass in three out of four project sites in 5 years.** Though some moderate trends have been noted for the four End-of-Program indicators (with the exception of the wood biomass that was not assessed), the data is not robust enough to allow for conclusions to be drawn with certainty about SILEM's impact on conservation, biological diversity and the rehabilitation of soil resources in targeted watersheds, which, in any case, often take a number of years after project completion to be clearly evident or even measurable. [34] (See section 2.3 for methodological issues regarding the indicators.)

Table 1: Preliminary results of SILEM's impact evaluation
(based on the End-of-Program indicators)

Key performance/outcome (PAD)	Target value	Baseline Value	End-of-project value (2008 or 2009)
Indicator 1: Percentage improvement in vegetation diversity index[1]	(a) > 0 in 5 years	2006 Value (actual): Soum: 60 Kompienga: 91 Sanmatenga: 82 Kouritenga: 3,35 Total: 150	Over the observed period, the number of vegetation species increased by 10 from 150 observed in 2006 to 160 in 2009, thus an increase by 6.6%
Indicator 2: Percentage improvement in invertebrate diversity index[2]	> 0 in 5 years	2006 Value (actual): Soum: 3,88 Kompienga: 2,8 Sanmatenga: 2,8 Kouritenga: 3,35 Total: 3.88	2009 Value (actual): Soum: 3,3 Kompienga: 2,3 Sanmatenga: 2,8 Kouritenga: 2,5 Total: 2.4
Indicator 3: Percentage increase in soil organic content[3]	> 0 in 5 years	2006 Value (actual): Oumpougdeni: 10,1 Kaboanga: 8,47 Kampelcezougou: 12,23 Nabnongomzougo: 13,30 Nakambé: 8,63 Koutoumtenga: 5,77 Damba: 5,87 Filifili: 7,6	With the exception of the project sites at Koutoumtenga and Kaboanga, there was an increase in organic carbon storage at all other observed sites from 2006 to 2008. The measurement of organic carbon storage is very costly due to the laboratory analysis required. For that reason no data was collected in 2009.

[34] The baseline data for three indicators (Indicator 1-3) was collected only in 2006 and actual values achieved are available either for 2009 or 2008. For the indicator measuring the increase in biomass, data was not collected in 2009 as the samples were taken late during the year and the productive species had dried out by then.

Indicator 4: Percentage increase in biomass	(1) grass : 5 in 5 years; (2) woody : > 0 in 5 years;		The impact evaluation stated that there was a decrease in the productive species from 2006 to 2008.

Source: Suvi des impacts du SILEM – Rapport final, Décembre 2009

[1]The Shannon Werner index was not used; data is based on two simple surveys comparing the number of vegetation species between 2006 and 2009.

[2] Used Shannon Werner index measured in same quadrates

[3] Measured along transect (classic soil organic content measurement method)

- **An increase in the comprehension and adoption of the IEM approach by targeted communities:** Despite some design flaws of the indicator (i.e., the lack of a methodology to establish the index measuring the "comprehension and adoption" of IEM technologies and the insufficient budget to carry out a community survey), the findings of two household surveys showed an increase in the share of households using at least one IEM technology from 48% in 2006 to 62% in 2009.[35] But as the collection of the baseline data did not take place until 2006 when SILEM's capacity building and investment activities had already been launched, chances are that the actual baseline value could have been even lower and the actual increase could, thus, have been greater.

- **Technologies and innovative IEM mechanisms adopted by targeted communities. This indicato**r was not only fully achieved but exceeded the target by far. In fact, eleven new household technologies had been adopted by 2009. In addition, three collective technologies were adopted at the inter-village level (collective river bank protection; development of feeder roads; landscape management with zoning), thus surpassing the indicator's target of eight.[36]

53. Given that the outcome indicators provide only limited information on the project's outcomes, the ICR also assessed whether and to what extent the Project succeeded in meeting expected results of each component as outlined in the PAD. Hence, the Project's main accomplishments are demonstrated by the following outcomes by component (for details see Annex 2):

54. **Component 1: Local Capacity Building for Integrated Ecosystem Management:** The main expected results from this activity included the knowledge and competency acquired by local communities and rural municipalities at the pilot sites to plan, implement, and monitor IEM activities. This has been fully achieved as demonstrated by the fact that SILEM has enabled the targeted communities and local authorities to achieve the following outcomes: (i) sound local development plans were prepared by incorporating an integrated approach to natural resources management; (ii) inter-community coordination for the management of shared resources deriving from a common watershed was strengthened; (iii) collaboration between the technical services and villages significantly improved; and (iv) the technical execution of environment and conservation micro-projects was effectively managed and supervised. Another observed benefit was that the technical capacity building with respect to IEM and agriculture technologies resulted in an improved productive capacity of rural resources (i.e., recovery of degraded lands, reduction in erosion, improved soil fertility, etc.). According to the beneficiary assessment conducted in October 2009, the respondents were satisfied with the relevance of the activities as well as the know-how they had acquired in IEM. They noted that, at times, the training

[35] See Thiombiano, A et al, 2008, Suivi d'impact du projet pilote de Gestion intégrée des Ecosystèmes des bas-fonds du Sahel : Rapport final de la situation de référence, SILEM, Ouagadougou ; Thiombiano, A et al, 2009 : Suivi d'impact du projet pilote de Gestion intégrée des Ecosystèmes des bas-fonds du Sahel, Rapport final, SILEM, Ouagadougou

[36] Information provided by the PIU.

duration was too short, and a more systematic review related to the lessons learned of the study tours was suggested.[37] With regard to the environmental and conservation impacts of the Project, the beneficiaries stressed the reappearance of small animals in forest areas and delineated zones as well as the improved fish population (i.e., the emergence of larger fish) in the restricted fishing areas ("frayères").[38]

55. Another commendable accomplishment was the establishment and good functioning of the CCIV's which guided the participatory preparation of the 5-year sub-watershed plans and ensured the annual translation of the sub-watershed plans into local investment plans. The involvement of the *Provincial Commission for Land Administration* (CPATs), the *Technical and Scientific Advisory Committee,* and the deconcentrated technical services in the review and adaption of these local ecological development plans and the implementation of annual investment plans has provided local government institutions with tools and an approach for introducing IEM in local development efforts. It also increased the maintenance and sustainability of IEM activities.

56. **Component 2: Local Investment Fund (LIF) for Integrated Ecosystem Management Sub-projects:** The main expected result of this component was the use of the LIF by communities and provincial institutions for the implementation of IEM plans at the pilot sites. This has been fully accomplished; in fact, the outcome of this component has by far exceeded appraisal expectations. The beneficiary assessment highlighted the very positive evaluation of the micro-projects by beneficiaries, who considered the investments relevant and of good quality.[39] Around 160 villages (against a target of 120 villages at appraisal) have benefited from the LIF. The Fund supported various Natural Resource Management (NRM) activities, including soil and agriculture techniques, water conservation technologies, livestock and fishery management, reforestation and forest management techniques and natural resource protection. A total of 2,971 micro-projects were financed and implemented at the four project sites by the end of the sixth year (2009) of project implementation.[40] The investments were largely found to be in good technical condition. According to the 2009 technical and financial audit, 83 percent of the audited projects were of good quality, 15 percent of medium quality and a mere 2 percent of poor quality.[41]

57. While it is not only an accomplishment that the number of completed micro-projects surpassed the end-of-project targets by far and more villages were served than initially planned, the micro-projects have also generated tangible results in the form of revenues. An assessment of the impact of agriculture planning in the province of Kouritenga in 2009 showed that: (i) farming with the support of stone bunds increased the yield of grain by 24 percent; (ii) the use of organic compost (coming from the « *fosses fumières* ») increased household revenues by 35 percent; and (iii) the treatment of furrows

[37] CODEX, Etude sur l'appréciation des actions du SILEM par les bénéficiaires, 2009.
[38] The re-emergence of species was noticed by the population in particular in the forest villages of Taankoemsé and Tibin as well as the pasture zone at Kampélcezogo and Nabnongomzogo and included monkeys, hyenas, antelopes, jackals, partridges and guinea fowl.
[39] CODEX, Etude sur l'appréciation des actions du SILEM par les bénéficiaires, 2009.
[40] In fact, 831 micro-projects were financed and implemented in the third year against a target of 120 for all four project sites and 2791 were financed in the fifth year compared to an initial target of 480 targeted at appraisal. (Information provided by the PIU) .
[41] ACEM, Evaluation de l'exécution technique, financière et de la passation des marches des conventions de confinancement SILEM/PNGT II 2006, 2007 et 2008, Rapport final, Janvier 2009.

(by means of jute bags filled with lumps of earth, placed among the plants) allowed the furrows to be filled in within two seasons.[42]

58. **Component 3: Institutional Capacity Building for Integrated Ecosystem Management:** The impact of the Project on supporting "a better understanding by local and central institutions of the IEM approach" and on improving "capacity of local and central institutions in assisting local communities in developing and implementing the sub-watershed IEM plan" was significant and went beyond the expected outcomes of some activities. The successful strengthening of capacity building was noted in the 2009 beneficiary assessment. It stressed the beneficiaries' appreciation of the Project's participatory approach to preparing the sub-watershed plans, the information and sensitization sessions, as well as the communication tools used and translated in local languages as part of the Project (e.g.. theatrical pieces, radio transmissions and assessment). The preparation of the four sub-watershed plans has resulted in a widespread understanding among the communities involved that water catchment areas are a common resource with the need for shared responsibility for their proper management.[43] The effective coordination and organization of access to shared watersheds promoted inter-village cohesion and led to a noticeable reduction in conflicts between resource users (see section 3.5 below).[44]

59. Another key accomplishment under this component was the official legal recognition of all micro-project sites and legislative texts ("arrêtés"), which created an important foundation for their sustainability. Whereas these measures were initially planned for the second and third phases of SILEM, it was a highly commendable accomplishment for SILEM to prepare and implement them during the last two years of project implementation and with the limited resources left at its disposal. A positive externality of these "contracts" was that SILEM's experience was studied and used by the DGFROP in its preparation of Burkina Faso's legal and regulatory framework on land tenure issues in rural areas.

60. **Component 4: Building Partnerships for Sustainable IEM Financing:** The accomplishments under this target are mixed when measured against the component's expected results and targets as stated in the PAD. The Project was able to contribute partly to the expected outcome of "improved national capacity to mobilize global financial opportunities/mechanisms for IEM initiatives". The Project has satisfactorily provided training sessions on available international financing mechanisms and application procedures to the central administration (notably the Ministry of Environment) and the private sector. SILEM also succeeded in preparing one project concept idea (against a target of five) jointly with the Association of Mayors of Burkina Faso for the plantation of 10 000 ha of "d'*Acacia sénégal"* in 82 communes in five regions. The Project was instrumental in initiating study tours to Niger and Senegal to present the project concept and to find an interested private entrepreneur, albeit without success with respect to the latter. On the down-side, the Project was not able to effectively "mobilize global financial opportunities", for example through a carbon sequestration activity funded under the CDM. The uncertainty of the renewal of the Kyoto protocol constituted a main hindrance in creating a partnership with private investors to invest in CDM projects.

61. **Component 5: Program Coordination, Administration and Monitoring/Evaluation:** Whereas, as it turns outs, SILEM's M&E system was not effectively integrated into the CBRD's M&E system, as had originally been intended, the Project established its own well functioning information system. Data

[42] Evaluation des effets des aménagements de DRS/CES réalisés avec l'appui du SILEM dans la province du Kouritenga.
[43] The training sessions with the communities include a module on sharing a common watershed with other villages.
[44] SILEM, Bilan 5 ans du SILEM, 2010

on technical, physical, and financial progress of SILEM's project sites were collected regularly and used by SILEM's management for fine tuning project planning and implementation. An important accomplishment was the construction of the GIS database for all four watersheds that allowed the: (i) establishment of data collection plots for impact assessment; and (ii) mapping of all sites of investments funded by SILEM LIF. However, despite significant efforts by the Project to introduce environmental and natural resource indicators into the M&E system, methodological problems and higher costs than anticipated affected the quality and usefulness of the data, hampering the assessment of the environmental and conservation impacts of the Project, some of which, in any case, could probably not yet be meaningfully measured at the time of closing. Nonetheless, apart from the difficulties related to the impact assessment, over the years, the PIU showed a high ability to execute project activities, as evidenced by the good disbursement rate and the ability to adjust project planning and implementation in light of SILEM's early termination after the first phase.

3.3 Efficiency

62. At the time the Project was designed, no cost-benefit or cost-effectiveness analysis was conducted. A detailed incremental cost analysis was carried out during project preparation, which was the standard procedure and requirement for GEF projects. As stated in the PAD, experience suggests that rural communities generally choose investments with very high rates of return that are sustainable. The successful implementation of the CDD concept used by SILEM (as elaborated in section 3.2 and Annex 2), reflects the recognition that a decentralized, participatory approach to rural development and natural resource management is more effective and sustainable than other more top-down alternatives. In addition, from the GEF resource mobilization perspective, the Project was highly efficient and cost-effective with a relatively modest GEF contribution leveraging the ongoing work of the IDA-funded CBRD program (which includes government and beneficiary contributions), through a design in which existing institutional structures, arrangements and procedures could be utilized for maximum synergies on the ground.

63. Significantly, an economic and financial assessment of SILEM's investments was later carried out in 2009, specifically on the sub-projects. This ex-post economic analysis highlighted the increased productivity of natural resources and improved pasture quality, which has led to higher incomes and improved food security. The periods of food security have been extended by 8-9 months during the year (in cases of low rainfall) and to 12 months (in cases of good rainfall). The micro-projects also resulted in increased and diversified income of the farmers (see Annex 3 for more details).

Table 1 : Potential revenues per household per technique according to the farmer (FCFA)

Province	Compost pits	Stone fence	Cultivation of lowlands	Zaï	Fodder crop	Commercial/ cash crop trees
Kompienga	375,000	200,000	-	-	-	500,000
Kouritenga	50,000 - 150,000	30,000-60,000	60,000	-	-	-
Sanmatenga	15,000 - 90,000	-	150,000	-	-	-
Soum	30,000	20,000-50,000		35,000-50,000	25,000-37,500	75,000

Source : Based on discussions with the focus group (Ministry of Agriculture, Water and Fisheries; Economic evaluation of investments financed by SILEM Project in 4 micro watersheds, November 2009).

It was estimated that activities to fight against desertification have the potential to improve farm income by 25-40%.[45] A sensitivity analysis underscored the positive rate of returns for some of the micro-projects under several scenarios. On the whole, although indicating different rates of return, the results of the assessment showed that the micro-projects have positive returns in all four provinces even if key assumptions are changed (notably low revenues and an increase in costs). (see also Annex 3). These findings are also supported by an economic analysis of CBRD I's 2002-2006 portfolio, which showed a high rate of return for compost pits (fosses fumières) and stone fences (cordons pierreux).[46]

64. In line with the incremental cost analysis to assess the incremental GEF costs of achieving global benefits through this project, the benefits identified under the analysis of each component have been mostly achieved (with some exceptions related to the fourth and fifth components) as evidenced through the results achieved in the various components of the project. While the Project supported successfully local and institutional capacity building to design and implement IEM activities, the building of partnerships for sustainable IEM financing and the set up of the Project's M&E system and conducting an impact evaluation posed a challenge. On the whole, the available data strongly suggests that the implementation of the SILEM project was efficient in terms of leveraging GEF funds and cost effective in terms of achieving the PDO in general and contributing globally towards sustainable conservation of biological and agricultural diversity.

3.4 Justification of Overall Outcome Rating

Rating : Satisfactory

65. This project is rated Satisfactory given the achievement in the KPIs and the achievements at the component level. At project completion, the KPI measuring conservation and environmental impact was not met given the incomplete data set. However, the PDO 2 indicator was achieved and data for the PDO 1 indicator suggests through extrapolation that project contributed to a good outcome. As the main agenda of the project was to introduce IEM technologies that resulted in higher incomes, the adoption rates of 62% from 48% show a positive trend. Lessons from other projects and countries have shown that when investments have a strong ownership of communities and they have significant benefits, as is the case here, their potential for sustainability is much higher. The Project also generated unexpected significant positive outcomes (notably the reduction in conflicts between resource users) that contributed to the achievement of the PDO.[47] The overall project outcome is therefore rated as Satisfactory.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

66. A key design element of the Project was to enable local communities to benefit from IEM income generation activities with communal and individual benefits. An economic assessment of SILEM's micro-projects showed that the investments have significantly contributed to the productivity of natural

[45] Ministère de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques, Evaluation économique des investissements réalises par le Project SILEM dan quatre micro basins versants, Novembre 2009

[46] World Bank, Implementation Completion and Results Report, Community-based rural development project, 2008. These are the same technologies that were supported by SILEM but were funded by CBRD I as they were carried out in areas where SILEM did not intervene.

[47] See section 3.5

resources, increasing agriculture revenues and restoring degraded land and biodiversity.[48] Livestock productivity also improved significantly, particularly in the province of Soum, due to the establishment of pasture zones and improved cultivation of forage crops.[49] Other direct income benefits derived from activities such as the demarcation of hunting zones, restricted fishing sites, planting of fruit trees, establishment of nurseries and breeding of grass cutter ("aulacodes") accrued to the rural population (in particular the rural poor), contributing to food security and improved quality of life of the rural population (payment of school fees, health costs etc.).

67. While gender equity continues to be a challenge in Burkina Faso, which has a low ranking on the UNDP gender-related development index to HDI ratio, women benefited from several of the income generating activities (notably the *fosses fumières*, the material for zaï, breeding of "*aulacodes"* and the production of honey).[50] Women have also been prominently represented in village associations and participated in the decision-making process at the community level, even though the administrative structures at the community level remain largely a male domain. The 2009 beneficiary assessment concluded that the interest of women and youth had been well taken into consideration in the implementation of SILEM's activities but suggested, among other things, the need to further support women's engagement in the decision-making process through the establishment of quotas in the different management entities at the community level.

(b) Institutional Change/Strengthening

68. Strengthening institutional capacity was a key strategy for ensuring sustainability of the IEM activities financed under the Project. To this end, almost all components focused on local capacity development through training, field studies and technical assistance, policy development through local rules establishment for shared natural resources knowledge, etc. SILEM organized about 534 training events and 27 workshops on a range of themes related to local development planning, NRM project management and sustainable land management practices.[51] The following long-term institutional impacts have been noted:

69. <u>At the local level:</u> The institutional support provided by the Project in policy planning (i.e., integrating IEM practices in the PCDs, administrative procedures (i.e., land tenure issues) and conservation of biological diversity in natural habitats (i.e., establishing a protected area for fishing) resulted in increased awareness and commitment of local institutions, village organizations and resource users with regard to biodiversity conservation and NRM. These activities were combined with the close involvement of local authorities and deconcentrated technical services in an effort to ensure coherence, relevance, and sustainability of the activities financed under SILEM. The involvement of and support by local governments has been instrumental in project implementation and enhanced the reflection of local land use priorities in provincial level development plans. The Project assisted the creation of the CCIVs that supported the preparation and implementation of the watershed management plans and inter-community coordination. With the termination of the Project, these committees will cease to be active

[48] Ministère de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques, Evaluation économique des investissements réalises par le Project SILEM dan quatre micro basins versants, Novembre 2009

[49] Based on a qualitative survey carried out in the context of an economic assessment of SILEM's investment (Ministere de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques, Evaluation economique des investissements realizes par le project SILEM dans quatre micro basins versants, Novembre)

[50] Women farm 44% of the plots in water catchment areas.

[51] Based on estimations provided by the PIU

although some of their coordination functions will be taken over by the Provincial Consultative Group (CCP). The establishment of Management Committees, as discussed in section 2.5, was also critical.

70. At the national level: Even though the project achieved limited institutional outcomes at the national level with regards to the IEM approach (due to a lack of funds the training events did not materialize at the national level), it did create some awareness and sensitization in particular with regard to international funding mechanisms and land management practices. SILEM provided advisory support and knowledge sharing to key central government institutions (notably the Ministry of Environment) and to the private sector. These accomplishments are likely to be sustained. The project supported the creation of the Technical and Scientific Advisory Committee (TSAC), which was set up to provide technical advice for the development of IEM tools, such as watershed plans. TSAC revised the four watershed plans during four meetings in 2005 and 2006. However, the meetings often took place with delays, as it was difficult to convene the various members in a timely manner. Overall, only six meetings were organized with the last one occurring in 2007. Since TSAC was created to provide technical advice during project implementation, the Committee will cease to be active after it terminates.

(c) Other Unintended Outcomes and Impacts (positive and negative)

71. A major unexpected positive outcome of the Project was its contribution to social peace between farmers/cultivators and cattle farmers in all four provinces. The organization of the productive zones/land into clearly delineated pasture zones and cattle routes, accompanied by an internal negotiation and consultation process and the establishment of management rules has contributed to conflict reduction. For instance, it was noted in the final evaluation report of SILEM (2010) that the number of recorded conflicts per year declined from 22 official cases in 2006 to zero cases in 2009 in Kouritenga. Likewise, damage caused by animals through uncontrolled rambling has diminished significantly.[52] Another unanticipated positive outcome was the formulation of land use rules and regulations and translation of these rules into written contracts, allowing official recognition of the investment sites by local authorities.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops:

72. Formal stakeholder workshops and a beneficiary survey were not carried out for preparation of this ICR. However, a beneficiary assessment was conducted in 2009 with a sample size of 95 households from 17 communities in four provinces. The survey focused on SILEM's approach, implementation and impacts of the Project. Also during project implementation, several stakeholder workshops were carried out on a wide range of topics including discussions on innovations in sustainable land management practices, international financing mechanisms, approach of SILEM, etc.

73. Meetings with stakeholder groups during the ICR mission revealed a high level of community awareness with very active local groups and associations confirming the importance of the Project. However, it also became clear that the increased capacity and interest in IEM practices created a demand for financial and technical support that far exceeds what was available through the project and left high expectations regarding follow-up support in the near future.

[52] SILEM, Rapport SILEM bilan 5 ans, 2010.

4. ASSESSMENT OF RISK TO DEVELOPMENT OUTCOME

Rating: Moderate

74. The risks to development outcome are assessed against the following criteria, which together constitute the overall risk to the sustainability of the project achievements:

Institutional risk: moderate. From the outset, local capacity building had been the Project's main strategy to ensure institutional sustainability. As mentioned in section 3.5 above, activities and investments have been embraced by local communities, government and other key national actors and institutions. The Project's approaches, procedures, and activities were institutionalized at the sites where SILEM intervened. Creating ownership by local beneficiaries over their local development and sub-watershed plans (through the participatory processes) was another important strategy, which was successfully adopted, to promote sustainability. A further key factor for fostering institutional sustainability was the Project's success in using local structures. For instance, consultations on NRM issues that had been carried out in the past by the CCIVs, were successfully mainstreamed into the consultation process of the CCPs, which is supported by the Government and the CBRD project.

Economic risk: low. Economic benefits for conservation and natural resource projects have been well documented; in the case of SILEM risk to factors that can adversely influence these benefits (such as fluctuating commodity prices, fuel and food price increases, weaker demand for Burkinabé exports, etc.) are expected to be low.

Financial risk: Moderate. The Project ensured financial sustainability by supporting productive investments that generate revenues, establishing legal agreements on the investment sites, and establishing management committees to maintain the sites. Despite the emphasis of the Project on ensuring sustainable investments, a few of the investments are at risk in the absence of further financial support. Likewise, the commitment of some of the Management Committees is at risk over the medium term since their members' work on a voluntary basis as funding for income-generating activities (planned initially under the third phase of the program) had not been secured.

Government ownership/commitment: Low. Though no funding has not yet been mobilized to ensure the continuation of the program the Government is currently pursuing several options to mobilize such resources. It is also noteworthy that the Government has shown strong commitment to decentralized rural development and buy-in to the IEM approach which continues to be implemented through the CBRD and other projects.

Technical risk: low. Proven technical conservation and natural resource management interventions have been used under the project. The beneficiaries manage IEM technologies (e.g., application of zaï technique, stone line building, treatment of furrows, protection of river banks, etc.) well and are able to replicate them without the need for additional support.

Social risk: low. SILEM has played a major role in conflict resolution and inter-village cohesion. Although women's involvement in the decision-making process still needs to be improved, women were supported under SILEM by providing a range of income-generating activities. The Project's contribution to establishing full participation of all social groups in managing the Local Investment Fund has also

supported good governance and social accountability mechanisms.

5. ASSESSMENT OF BANK AND BORROWER PERFORMANCE

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

Rating: *Moderately Satisfactory*

75. SILEM's design was fully aligned with Government's long-term development objectives as defined in the PRSP and built on the lessons learned from the CBRD project. The Project pioneered a new approach by linking the IEM concept with a rural community-driven development (CDD) operation that allowed it to respond to high priority concerns of the communes on socio-economic infrastructure while also ensuring buy-in for the shared watershed management and engagement in IEM activities. Efforts were made to provide the study with a sound background analysis but due to weak local capacity in managing the studies the preparation of the project took three years. There were two important shortcomings in the preparation and design of the project, the insufficient development of the fourth component on mobilizing national and international resources and the weak design of the impact indicators. It is however important to note that despite the lack of content in component 4, the inclusion of such a component represents in itself a far sighted thinking of the team. The impact of the poor design of the fourth component, did not allow for a successful implementation but did not affect the implementation of the other components, nor did it affect significantly the project's development objectives. The poor design of the impact indicators made the timely establishment of the benchmarks difficult and affected the quality and usefulness of the data (see also section 2.3 and 3.2). Additionally, inconsistencies were also observed in the log frame, the PAD and the Grant Agreement. No quality of entry evaluation is recorded.

76. Overall, while the project was very well aligned with Government's objectives, highly innovative in its approach to IEM, and very well aligned with communities interests, taken together, the three deficiencies require that quality at entry be only set at Moderately Satisfactory.

(b) Quality of Supervision

Rating: *Moderately Satisfactory*

77. Counterparts in Government (both the PIU and the CBRD project) noted that the Bank was a supportive partner for SILEM throughout project implementation and for providing useful inputs and advice. Missions included field visits (with specialized technical experts) engaged and public officials and community members. Findings and recommendations are documented in detailed aide memoires, although these were often not recorded in IRIS. While Bank staff provided only one formal supervision mission per year, the placement of the TTL in the field allowed constant and direct informal support and supervision. Likewise, other team specialists for procurement, financial management and safeguards were also placed either in the field or the region which allowed the team to respond to implementation issues in a timely manner. Shortcomings in project implementation were identified during the supervision process and the MTR and adequate recommendations were made to strengthen project performance. Despite appropriate decisions made by the Bank team, in particular related to the revision

of the fourth component and the impact indicators, a restructuring of the project would have probably yielded a better outcome. Fiduciary reviews were carried out, for the most part, in conjunction with routine supervision missions; the fiduciary reviews for some financial management and procurement supervision missions are not reported in IRIS; and for financial management there were some disconnects in the reported ratings. Fiduciary issues that emerged in the first half of project implementation (in particular the initial low disbursement rate) were identified by the Bank and led to an improvement in the Project's overall disbursement performance. Social and environmental safeguards aspects were addressed during project implementation. The latest report in 2010 demonstrates the accomplishments achieved in this regard (e.g., the safeguard forms have been mainstreamed into the application procedures for the micro-projects) but little documentation on the monitoring of safeguard issues during project implementation is available.

78. The Bank supervision seems to have adequately supported the achievement of the PDOs, though it failed to formally restructure the project regarding the fourth component and, as indicated above, the monitoring of the project indicators was weak (see section 2.3). Project supervision was therefore rated moderately satisfactory.

(c) Justification of Rating for Overall Bank Performance

Rating: *Moderately Satisfactory*

Despite the project's alignement with the Government's objectives and the strong interaction between the Project's TTL and other team members which were based in the field, the design and supervision shortcomings indicated above justify a Moderately Satisfactory rating.

5.2 Borrower Performance

(a) Government Performance

Rating: *Satisfactory*

79. The Government of Burkina Faso demonstrated strong commitment and ownership throughout project preparation and design. The Technical Monitoring Committee, set up during project preparation, was essential in ensuring institutional coordination and close involvement of the Government in the design of the project. Government's active interest was also demonstrated by its US$0.5 million in total counterpart contribution, paid in a timely manner during project implementation. A key success factor was the involvement of technical services of the Ministry of Agriculture, Environment and others as well as of public officials from local government in Project's key activities. However, Government's CBRD project failed to integrate SILEM's Monitoring and Evaluation system requirements into its existing M&E system. In this respect, the Government could have done more to coordinate the activities of the projects.

(b) Implementing Agency or Agencies Performance

Rating: *Satisfactory*

80. Overall, the performance of the implementing agency was commendable. Project management was carried out by the experienced and dedicated team at SILEM with the National Coordinator being a previous staff member of the CBRD project. The PIU also succeeded in actively involving local entities and partners and provided valuable advisory support to the DGFROP. The PIU likewise established excellent relationships with the Ministry of Environment and a broader community of conservation practitioners, including international organizations (for example, TerrAfrica). Furthermore, the project team demonstrated great adaptability to the finalization of the Project after the first phase by reprioritizing its activities and rationalizing its available budget resources to support new interventions seeking to ensure sustainability of project achievements. Monitoring of the Project's activities was adequately carried out during implementation despite the failure to integrate SILEM's M&E requirements in the M&E systems of the CBRD Project. However, less attention was paid to the evaluation of the outcome indicator. Issues regarding financial management and procurement (in particular related to the initial slow disbursement) were addressed in the second part of project implementation when most of the capacity building was finalized and the demand for the micro-projects exponentially increased.[53] The Government's Completion Report ("Rapport d'achèvement") was well prepared and has provided a helpful input for preparation of this ICR.

(b) Justification of Rating for Overall Borrower Performance

Rating*:* Satisfactory

6. LESSONS LEARNED

81. *Indicators must be realistic, feasible and available at the time the project is launched.* A well-prepared logical framework (i.e., a results-based monitoring framework) should be the backbone of project design and should be fully specified and agreed prior to implementation. Objectives, indicators and targets need to be realistic and measurable. A baseline is not only necessary in order to measure project results, but also disciplines project designers to pay attention to realistic and measurable impact indicators.

82. *An IEM approach focusing on inter-village cohesion built on a common interest in the protection of shared watersheds is a successful model.* SILEM was innovative as it brought together villages located in a watershed area and created a common interest among them based on an integrated management plan to protect the watershed. This approach of developing a common vision across interested villages allows for a coherent organization and management of different occupations (farmers/cultivators and cattle farmers) based on the recognition the performance in each business depends on the common management of the shared watershed. The success of this approach was also reflected in the decline in social conflict in the areas where SILEM intervened.

83. *Formal and informal mechanisms were both required to ensure the sustainability of the investment*. Community participation in SILEM-funded activities was necessary but not sufficient to

[53] The initial disbursement foresaw the implementation of micro-projects in the early years of the Project while, in practice, the PIU focused on low cost training and capacity building activities for the first two years, shifting a large share of disbursements to the second part of the project life cycle.

ensure sustainability of improved infrastructure as the need to address land tenure security in conjunction with application of an IEM approach became apparent. SILEM also stressed therefore the importance of maintaining the sites by improving land tenure (i.e., granting titles and creating land usage tools). They were established and approved by all key local authorities.

84. *Implementation of the IEM project alongside an established CDD project (the CBRD project) proved to be a unique opportunity for SILEM to increase its implementation effectiveness.* SILEM's complementarity with the CBRD allowed the Project to use the local structures, joint management, capitalizing on lessons learned, etc., thereby avoiding duplication. In addition administrative costs could be kept low while resources could be spent most effectively on the pilot activities. Given the successful integration, SILEM built the foundation to promote the integration of the pilot operation in other ongoing activities (i.e. the CBRD program or the WB funded FIP operation).

ANNEXES

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in US$ million equivalent)

Components	Appraisal Estimate (US$ million)	Actual /Latest Estimate (US$ million)	Percentage of Appraisal
1. Local Capacity Building	0.14	0.13	89%
2. Local Investment Fund (LIF)	1.92	1.90	99%
3. Institutional Capacity Building	0.63	0.57	90%
4. Building Partnerships for Sustainable IEM Financing	0.02	0.01	73%
5. Project Coordination, Administration, M&E	0.81	0.80	99%
Total Baseline Cost	**3.52**	**3.41**	
Physical Contingencies			
Price Contingencies			
Total Project Costs	**3.52**	**3.41**	

Please note that exchange rate at appraisal was US$1 = 535 CFAF

(b) Financing

Source of Funds	Type of Financing	Appraisal Estimate (US$ million)	Actual/Latest Estimate (US$ million)	Percentage of Appraisal
Borrower		0.26		
Global Environment Facility (GEF)		4.5		

Annex 2. Outputs by Component

Component 1: Local capacity building for integrated ecosystem management

The component's overall implementation performance was rated satisfactory.

1. The component's objective was to strengthen the technical and organizational capacity of rural communities and municipalities to plan, implement and monitor IEM activities. Planned activities under this component were centered on technical capacity building at the community level, the development of effective watershed management committees and training of community groups and watershed associations in the use of various IEM tools. The Key Performance Indicator identified for this component measured the "degree of functionality of the CCIVs" based on the following criteria: (i) the inclusion of 2 representatives of each village of the sub-watershed; (ii) meetings held once per semester; (iii) review and approval by the CCIV of the preliminary sub-watershed plan; (iv) a proven capacity for implementation of the sub-watershed plan and arbitration of conflicts; and (v) reviews and approvals of the annual investment plan.

2. "Degree of Fnctionality of the CCIVs" The indicator was met in a satisfactory manner with some outputs even above target. The Project supported the establishment of four Inter-village Sub-Watershed Management Committees (CCIVs). Following a process of village awareness campaigns on SILEM, about 320 representatives from 160 villages were selected for the CCIVs in 2005.[54] Since then, the CCIVs have been fully operational with about 3 sessions held each semester per sub-watershed (against an initial target of one session per semester). In 2005 and 2006, the meetings focused on the review and approval of the sub-watershed plans (*Plans de Gestion Intégrée des Ecosystèmes (PGIE)*). The CCIVs have been instrumental in facilitating the preparation of the five-year sub-watershed plans and their annual implementation. The plans were prepared under the guidance of the CCIVs in a participatory planning process (including a participatory diagnostic oriented by facilitators, creation of focus groups at the village level, consolidation of proposals by all villages which are part of the watershed, and prioritization of proposals, using GIS tools). Once reviewed by the *Technical and Scientific Advisory Committee*, the plans were adopted by the CCIVs and the *Provincial Commissions for Land Use Planning* (CPAT) in 2005.

3. To translate the sub-watershed plans into annual investment plans, the CCIVs organized inter-village sessions to prepare the annual investment plans, which were then reviewed and adopted by the CCIVs at the end of November of each year and then integrated in the Village Development Plans ("*plans de gestion des terroirs")* and, since 2008 and 2009, in the Commune Development Plans ("*plan communal de développement*" – PCDs).[55] Over the six years of project implementation, a total of 67 sessions were conducted and 561 annual investment plans were prepared. The CCIVs capacity to arbitrate conflicts has been proven by the preparation of the annual investment plans. According to the 2010 evaluation report of SILEM, the villages have implemented about 86,2% of micro-projects

[54] The representatives were members of the *Village Land Management Committees (CVGTs)*.

[55] The preparation of the annual investment was implemented through a participatory process: (i) each village elaborated its annual investment plan by selecting a number of activities from the sub-watershed plan in a participative manner, facilitated by the CVD; (ii) the annual investment plans are consolidated and validated by the CCIV during an inter-village session; (iii) and, finally, these validated watershed annual investment plans are merged together at the national level and submitted to the project steering committee for adoption.

included in the annual investment plans on a yearly basis.[56] Implementation of the plans were monitored by the CCIVs and the *Village Land Management Committees* (CVGTs).

4. Technical Training of Community Groups and Watershed Associations in the Use of Various IEM Tools: In addition to the development of effective watershed management committees, the Project supported technical capacity building at the community level and training of community groups and municipal councils and members of the Provincial Consultative Group (*Cadre de Concertation Provincial- CCP*). CCIVs and members of other community organizations (e.g. the CVGTs) benefited from a range of training sessions on technical, financial and management issues regarding the LIF. About 6029 CVGT and CVD members were trained on various subjects such as participatory monitoring, financial management, maintenance, etc. In addition, 1445 beneficiaries (CVD, municipal council members) received training on legislative texts in forestry, environment and water. With the replacement of CVGTs by Village Development Councils (*Conseil Villageois de Developpement - CVD*), about one third of the newly elected members in the CVDs had to be trained again.[57] In addition, 8566 beneficiaries of SILEM (farmers, members of community groups, etc.) were trained in agricultural techniques, such as "zaï", fodder crops, protection of riverbanks, production and usage of compost and stone line building.

5. Development and Distribution of Communication and IEM Tools. As part of the technical capacity building and awareness creation and training on IEM concepts, the Project supported a number of information tools (e.g.. technical documents, picture boxes, audio tapes) and conducted 8 radio transmissions and their distribution through 26 broadcastings. The Project also financed a theatre play on SILEM as well as a documentary, which was presented twice on national TV and 146 times in the four selected provinces.

Component 2: Local Investment Fund for Integrated Ecosystem Management-Sub-projects

The component's overall implementation performance was rated highly satisfactory.

6. This is the main component of the project consuming 56% of the total project's cost. The component's objective was to provide, under two separate windows, resources to communities and provinces for: (i) financing village and inter-village (watershed management committee) sub-projects; and (ii) undertaking larger investment projects at the provincial level. Funds under the *first window* (<US$ 35,000) were earmarked for IEM activities incorporated into the sub-watershed management plans and the village development plans. The *provincial window* (> US$35,000 – US$150,000) aimed to support sub-projects based on priority needs identified in the watershed management plans. Two Key Performance Indicators were specified under this component: (i) the number of IEM micro-projects financed and entirely implemented in each province (measured by the following targets: 35 (year 3) and 120 (year 5)) and (ii) the percentage of completed IEM micro-projects receiving a positive evaluation (based on a participatory review = 75% and the project review = 60%).

[56] SILEM, Rapport bilan sur 5 ans, 2010.
[57] Based on estimations by the PIU.

7. The first indicator has surpassed by far the initial target. A total of 2971 micro-projects had been financed and implemented in the four project sites by the end of the sixth year of project implementation. In fact, 831 micro-projects were financed and implemented in the third year against a target of 120 for all four project sites and 2791 were financed in the fifth year compared to 480 targeted at appraisal. The micro-projects were selected according to the annual investment program and were managed and supervised by the communities. The funds have been placed in the village council accounts and are managed by the CVGT. Under this component, total disbursement amounted to US$ 2.7 million (52% of total project cost). Given the high demand by the communities, all micro-projects were funded through the first window.

Table x : Number of SILEM's micro-projects and cost by province

Province	Actual number of completed micro-projects (as of December 2010)	Actual cost of completed micro-projects (in US$)
Soum	1070	715,641
Kouritenga	766	731,182
Kompienga	397	495,393
Sanmatenga	738	761,744
Total	**2971**	**2,703,960**

Source: SILEM (PIU)

8. Around 160 villages have benefited from the Local Investment Fund, which supported various NRM activities, notably soil and agriculture techniques, water conservation technologies, livestock and fishery management, reforestation and forest management techniques and natural resource protection, more specifically:

(i) Land protection and restoration/conservation of water and soil: The Project supported a number of activities related to land planning and development, including 3 837 ha of improved land through stone bunds, 8 307 *fosses fumières*; the recuperation of 3 138 ha of degraded land using the *scarifiage, zai* technique, *demi-lunes,* 250 gullies treated for agro-pastorale production, and 26 500 m revitalized small dykes.

(ii) Reforestation and forest resource management: Key activities related to the restoration of forest cover and biodiversity included the demarcation of 75 ha of community forests with paint and 155 ha of community forests with well-defined concrete markers, the production of 195 720 seedling plants, the use of 941,934 plants for reforestation, and the establishment of an 11 ha botanical conservatory.

(iii) Improvement of livestock production: The main constraint for livestock production is the poor organization of space. For this reason, SILEM's investment focused, in particular, on the creation of 3514 ha of pasture zones and 417 km of pasture ways, as well as the creation of 10 pastoral water points.

(iv) Promotion of plant production: The key outputs in this area were the conversion and rehabilitation of 166 ha of lowland areas (mainly for rice production) and the supply of 8, 800 kg of improved cereal seeds to the beneficiaries of converted or rehabilitated parcels of land.

(v) Support to the fishing production: In order to improve the productivity of water reservoirs, the LIF supported the creation of two restricted fishing areas ("frayères"), supplied 4 reservoirs with fish, and provided 61 fishermen with regulatory fishing equipment.

(vi) Research activities: The LIF also financed the supply of equipment for 460 beekeepers and the supply of 73 grass cutter ("aulacodes") parents for breeding.

9. The second indicator was likewise met in a satisfactory manner. A technical and financial audit (covering the period 2006-2008) showed that 100% of the micro-projects had been implemented and 98% of the beneficiaries surveyed were satisfied with the Project's supervision carried out by the PIU, the technical services, the village organizations and the private sector.[58] The beneficiary assessment highlighted the positive evaluation of the micro-projects by the beneficiaries, who judged the investments to be relevant and of good quality.[59]

10. The technical and financial audit also found that the micro-projects were in good technical conditions. In fact, 83% of the selected projects (based on 497 micro-projects) were judged of good quality, 15% of medium quality and only 2% of poor quality. The evaluation was based on technical norms, quality of maintenance work, and physiognomic aspects. The audit also revealed that 98% of the beneficiaries were satisfied with the supervision carried out by the PIU as well as the involvement of the technical services, the village organizations and the private sector in monitoring the implementation of the micro-projects. An additional assessment planned in 2010 to cover the remaining years of project implementation, however, could not be carried out due to lack of funding.

Component 3: Institutional Capacity Building for Integrated Ecosystem Management

The components overall implementation performance was rated satisfactory.

11. The objective of this component was to support institutional capacity building to promote the creation of an adequate policy environment. The Key Performance Indicator identified for this component was the degree of completion of the sub-watershed IEM plans, measured through several targets: (i) local development plans coherent together, (ii) sub-watershed plan designed, (iii) plans validated by CCIV (iv) plans adopted by CPAT.

12. The indicator was met in a satisfactory manner. Through a participatory process at the village-level, the communities prepared a local development plan, which identified development constraints and measures to address them. This plan was consolidated with those of the other villages that shared a common watershed into a five-year sub-watershed plan. The coherence of the plans was ensured through the spatial planning of the activities and illustrated on a map. This sub-watershed plan was prepared for each of the four pilot watersheds in Soum, Kouritenga, Kompienga and Sanmatenga and adopted by the CCIV and the CPAT during four sessions held in 2005 and 2006. At the end of the Project's lifetime, four sessions were held with the CPATs in each province to present and discuss the activities and results of SILEM and in an effort to ensure the maintenance and monitoring of the investments by the technical

[58] The audit was based on a sample of 231 micro-projects carried out in 50 villages in the four provinces. (ACEM, Evaluation de l'exécution technique, financière et de la passation des marches des conventions de co-financement SILEM/PNGT II 2006, 2007 et 2008, Rapport final, Janvier 2009).
[59] CODEX, Etude sur l'appréciation des actions du SILEM par les bénéficiaires, 2009.

services of the administration. GIS maps were used to facilitate visualization of the investment sites around each watershed.

13. The successful implementation of this component was also noted in the 2009 beneficiary assessment. It stressed the positive appreciation by the beneficiaries regarding the participatory approach of the Project, the information and sensitization sessions and the communication tools used and translated in local languages by the Project (e.g.. theatrical pieces, radio transmissions and assessment). With regards to the training materials, communication tools and supporting documents, the most significant outputs were a methodological guide on NRM (based on lessons learned in the four watersheds), a technical guide on the NRM technologies used by SILEM's beneficiaries, and the carrying out of five thematic studies (for example, a study on options to extract value from wildlife in the provinces of Kompienga and Soum, an economic and financial assessment of SILEM's investments, etc.). More studies had initially been planned but were not carried out when the activities were reprioritized in the last two years of SILEM and reoriented towards those geared to ensure the sustained utilization of the investments.

14. A key accomplishment under this component was the formulation of land use rules, which were translated into written contracts. Overall, 92 local contracts that recognized pasture zones and livestock tracks, village forests, regenerated protected lands, improved hallows for rice farming, restricted fishing areas etc. were signed. Enhancing land tenure security was initially planned for the second and third phase of SILEM. However, it is commendable that the Project moved ahead with the establishment of these contracts, given that it had only limited resources left at its disposal and less than two years to develop and implement them. These accomplishments caught the attention of the General Directorate of Land Tenure, which studied the experience of SILEM as it prepared the legal and regulatory framework on land tenure issues in rural areas.

15. Apart from the training for decentralized institutions and community organizations, the PAD also specified as an output the training and capacity building for national structures responsible for monitoring and coordinating the international environmental conventions, the private sector and NGOs. In practice, these training events did not materialize due to a lack of funds. Likewise, the planned environmental policy fora for dialogue between IEM stakeholders were not carried out.

Component 4: Building partnerships for sustainable IEM financing

The component's overall implementation performance was rated moderately unsatisfactory.

16. The objective of this component was to build the capacity at local and national levels to mobilize national and international funds to address environmental and resource management issues of local, regional and potentially global significance. The component included the following activities: (i) assisting and training CVGTs, watershed management committees, and community leaders in the mobilization of funds for environmental protection and local development; (ii) providing training to central and local governments to enable them to engage in global financial resource mobilization and environmental negotiations; (iii) initiating contacts between communities and environmental management partners (e.g. private sector, NGOs, northern hemisphere cities, bilateral donor agencies); and (iv) assisting the parties in reaching mutually beneficial contractual arrangements. In addition, the component also envisaged to explore: (i) opportunities for partnerships recommended by the Kyoto Protocol and the Convention on Climate Change, and partnerships through the carbon trade markets

(twinning, etc.); and (ii) mechanisms for supporting alternative sustainable financing mechanisms such as a desertification mitigation fund. Two Key Performance Indicators were specified under this component: (i) the number of new initiatives developed even though not all funded (measured by a target of 5 initiatives); and (ii) the number of sub-watershed IEM plans and/or micro-projects financially supported by global partnerships (measured by a target of 2 projects).

17. In retrospect, the PAD was unrealistic in expecting that the Project team could prepare five project concepts and complete two of them (supported by global partnerships) during the lifetime of the Project. During early implementation, the Project made significant efforts to develop project concept ideas that would meet the requirements of the international adaptation funds. However, it soon became clear to the Project team that the identification of a private investor was a serious challenge. Investors had limited interest in investing in CDM projects due to the novelty of the CDM mechanisms and the uncertainty of the renewal of the Kyoto protocol. In addition, one potential reforestation project that had been identified by the Project team required significant analytical work (i.e. elaborating the evaluation methods for carbon capture and the sequestration amount). Moreover, the institutional arrangements between the community and the private sector partner, the monitoring and evaluation mechanism for the plantations and land tenure security aspects of the plantation sites were not yet defined. These implementation problems were mainly due to the poor design of the component that had not adequately taken into account the up-front analytical work and resources required to meet the expected outcomes. In view of these implementation challenges, the team made the right decision during the Mid-Term Review to limit the expected project results in this area to knowledge sharing and providing capacity building on the adaptation funds. The respective indicators, however, were not formally revised.

18. The Project did succeeded in accomplishing the goals set under the revised component, namely to carry out a number of activities identified in the PAD. The Project supported several workshops, training sessions and study tours to inform key stakeholders in the country about the mechanisms and opportunities to mobilize international funds. Efforts were also made to prepare one project concept idea with the support of an international consultant in 2008. The proposal note was prepared jointly with the Association of Mayors of Burkina Faso for the plantation of 10 000 ha of "d'*Acacia sénégal"* in 82 communes situated in 5 regions.

19. On the whole, if measured against the initial expected results, the Project managed to develop only one project concept idea instead of 5. The second indicator was not met given the difficulties encountered in attracting investors. Taking all this into consideration, the component is assessed as moderately unsatisfactory.

Component 5: Program Coordination, Administration and Monitoring/Evaluation

The component's overall implementation performance was rated moderately satisfactory.

20. The objective of this component was to provide incremental funding to: (i) support the cost of project implementation incurred by the CBRD project coordination unit and the provincial teams; and (ii) adapt the M&E and impact assessment systems of the CBRD project to the added requirements of the SILEM, with emphasis on strengthening the environmental and natural resource components of the M&E system of the CBRD project. The Key Performance Indicator specified for this component is the degree of efficacy of the impact monitoring system (measured by the following targets: data collection

& analysis procedure designed and adopted for each of the 4 indicator, baseline data collected in year 1 on all 4 indicators, data collection each year, data collection in year 5, final reports with analysis of impact).

21. Significant efforts were made by the team to strengthen the environmental and natural resource components of the M&E system of the CBRD project, although in hindsight, methodological problems and higher cost than anticipated affected the quality and usefulness of the data. At the center of the impact assessment were four End-of-Program indicators (measuring the vegetation diversity index, the invertebrate diversity index, soil organic content and biomass) that had been identified at project appraisal. Following initial delays in identifying a local partner institution for IUCN, the Impact Monitoring Manual was prepared in 2006. The study establishing the benchmark targets ("etude de reference") was also initially planned for the beginning of the Project but was finalized only in 2008. In addition, due to difficulties in data collection and high laboratory cost, only some data could be collected for 2 or 3 years over the period 2006-2009, depending on the indicator. For reasonable change/ improvement to be recognized in biodiversity conservation, at least a five-year period is required, as foreseen in the PAD. Thus, the data collected to date does not yet permit any firm conclusions to be drawn given the short time period for assessment. The final impact evaluation report was submitted to the project unit in 2010. In light of these implementation problems, not all targets could be achieved and thus, the Key Performance Indicator was only partly met.

Degree of efficacy of impact monitoring system, as measured by point system (20 per province or 80 overall)	**Target** (for all four provinces)	**Achieved**
Data collection & analysis procedure designed and adopted for each of the 4 indicator (4pt);	4 (16)	4 (16)
Baseline data collected in year 1 on all 4 indicators (4pt);	4 (16)	0
Data collection each year = 8 a) 2 year (1/2 per indicator) = 2 b) 3 year (1/2 per indicator) = 2 c) 4 year (1/2 per indicator) = 2 d) 5 year (1/2 per indicator) = 2	8 (32)	3.5 2006 = 1 (4) 2007 = 1/2 (2) 2008 = 1(4) 2009 = 1(4) (14)
Final reports with analysis of impact (4pt).	4 (16)	4 (16)
TOTAL	**20** **(80)**	**11.5** **(46)**

Note:
1 Indicator : Percentage improvement in vegetation diversity index (>0 in 5 years) : Data was collected in 2007 and 2009.
2 Indicator : Percentage improvement in invertebrate diversity index (> 0 in 5 years) : Data collection was carried out in 2006, 2008 and 2009.
3 Indicator : Percentage increase in soil organic content (> 0 in 5 years) : Data collection was carried out in 2006 and 2008
4 Indicator : Percentage increase in wood biomass : No data is available.

22. Apart from the shortcomings related to the impact assessment, another challenge was the integration of SILEM's M&E requirements into the already existing M&E system and processes of CBRD, despite the budget available at SILEM to pay for the CBRD services. As a result, the PIU established its own M&E system but with little capacity support until the MTR when an additional staff

member was recruited. The M&E system adopted by SILEM proved to be functional and captured the implementation of Project activities accurately and in a timely manner – solely less attention was paid to the evaluation of the PDO indicators as the results of the respective household surveys were not assessed in the reporting documents.

23. Nevertheless, over the years the PIU showed a high ability to execute the Project's activities as demonstrated by the good disbursement rate and ability to adjust project planning and implementation to the early termination of SILEM. The team worked well with the CBRD team making it possible to capitalize on CBRDs local structures and experience. An important accomplishment was construction of the GIS database for all four watersheds that allowed the Project to (i) set in place data collection plots for the impact assessment and (ii) map the sites of all investments funded by SILEM LIF. The PIU also facilitated regular sessions to coordinate and share experience with other partners and institutions on land degradation issues, forest management and climate change adaptation. However, the development of a natural resource account, initially planned in the PAD, could not be carried out due to lack of resources.

Annex 3. Economic and Financial Analysis

An economic assessment of SILEM's micro-projects was carried out in the four Provinces in 2009 to evaluate SILEM's effective and potential impact on the local economy.[60] Local benefits achieved from the investments included increased productivity of crops and livestock and greater sustainability of resources as depleted assets are restored. The micro-projects also resulted in increased and diversified income of the farmers (see table 1 below). It was estimated that activities related to fight against desertification (LCD) have the potential to improve farm income by 25-40%.

Table 1 : Potential revenues per household per technique according to the farmer (FCFA)

Province	Compost pits	Stone fence	Cultivation of lowlands	Zaï	Fodder crop	Commercial/ cash crop trees
Kompienga	375,000	200,000	-	-	-	500,000
Kouritenga	50,000 - 150,000	30,000-60,000	60,000	-	-	-
Sanmatenga	15,000 - 90,000	-	150,000	-	-	-
Soum	30,000	20,000-50,000		35,000-50,000	25,000-37,500	75,000

Source : Based on discussions with the focus group (Ministère de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques, Evaluation économique des investissements réalises par le Project SILEM dans quatre micro basins versants, Novembre 2009)

The study included an assessment of the investment's financial viability that applied several financial criteria (the benefit/cost ratio (B/C), the net present value (NPV), number of years to obtain a positive return (y) and the internal rate of return (IRR). An economic analysis for the Project as whole was not carried out as in the case of most demand-driven programs, there are constraints to determining an economic rate of return (ERR) because the portfolio mix and allocation outcomes are not known ex-ante. The assessment is based on a sensitivity analysis that considers potential changes (low and high costs and revenues of 10% and 50% respectively) and how this will affect the return of a number of selected micro-projects in all four provinces. The sample of the study is indicative, assessing four types of micro-projects (compost pits, stone fences, zai and fruit trees) and covering only around 3% of the total micro-projects; therefore results should be interpreted with caution. On the whole, although indicating different rates of return, the results of the assessment showed that the micro-projects have positive returns in all four provinces even if key assumptions are changed (notably low revenues and an increase in costs) (see table 2 and 3). The only exception constitutes stone fences, which do not achieve a positive present net value in case revenues would drop by 50%.

[60] Ministère de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques, Evaluation économique des investissements réalises par le Project SILEM dan quatre micro basins versants, Novembre 2009

Table 2: Financial sustainability of SILEM's micro-projects [1)]

Critera	Baseline	Low cost		Low Revenues		High Cost		High Revenues	
		10%	50%	10%	50%	10%	50%	10%	50%
COMPOST PITS (FOSSES FUMIERES)									
			Kompienga						
B/C	4.95	5.61	10.90	4.36	1.98	4.41	2.97	5.55	7.93
NPV	349,503	356,562	384,796	307,494	139,459	342,445	314,210	391,512	559,548
IRR	-	-	-	-	-	-	-	-	-
Y	1	1	1	1	1	1	1	1	1
			Kouritenga						
B/C	4.36	4.96	9.73	3.83	1.68	3.88	2.58	4.90	7.05
NPV	308,010	315,069	343,303	270,150	118,712	300,951	272,717	345,870	497,308
IRR	-	-	-	-	-	-	-	-	-
y	1	1	1	1	1	1	1	1	1
			Sanmatenga						
B/C	2.86	3.29	6.73	2.48	0.93	2.51	1.58	3.25	4.79
NPV	202,084	209,143	237,377	174,817	65,749	195,025	166,791	229,351	338,419
IRR	-	-	-	-	-	-	-	-	-
y	1	1	1	1	1	1	1	1	1
			Soum						
B/C	2.43	2.81	5.86	2.08	0.71	2.12	1.29	2.77	4.14
NPV	171,352	178,411	206,645	192,894	66,042	164,293	136,059	256,321	383,173
IRR	-	-	-	-	-	-	1836%	-	-
y	1	1	1	1	1	1	2	1	1

Criteria	Baseline	Low cost		Low Revenues		High Cost		High Revenues	
		10%	50%	10%	50%	10%	50%	10%	50%
STONE FENCE (CORDONS PIERREUX)									
			Kompienga						
B/C	4.47	4.85	9.53	3.74	1.63	3.79	2.51	4.79	6.90
NPV	563,808	577,025	629,893	494,210	215,819	550,591	497,723	633,406	911,797
IRR	828%	-	-	386%	67%	408%	130%	9904%	-
y	2	1	1	2	2	2	2	2	1
			Kouritenga						
B/C	2.79	3.21	6.59	2.41	0.90	2.45	1.53	3.17	4.69
NPV	369,124	382,341	435,210	318,995	118,477	355,907	303,039	419,254	619,772
IRR	162%	230%		121%	34%	124%	61%	222%	3330%
Y	2	2	1	2	2	2	2	2	2
			Sanmatenga						
B/C	2.14	2.24	2.64	1.82	0.57	2.04	1.64	2.45	3.71
NPV	282,625	295,842	348,710	241,145	75,227	269,408	216,539	324,104	490,023
IRR	99%	128%	-	78%	21%	79%	42%	125%	372%
Y	2	2	1	2	2	2	2	2	2
			Soum						
B/C	1.19	1.43	3.37	0.55	-0.14	0.99	0.46	0.89	1.58
NPV	156,805	170,023	222,891	72,666	- 18,373	143,588	90,720	118,185	209,223
IRR	46%	57%	265%	23%	-	37%	17%	38%	79%
Y	2	2	2	2	N[2)]	2	2	2	2
ZAÏ									
			Soum						
B/C	3.43	3.92	7.85	2.98	1.21	3.02	1.95	3.87	5.64
NPV	71,805	73,902	82,287	62,529	25,421	69,709	61,324	81,082	118,189
IRR	-	-	-	-	-	-	-	-	
Y	1	1	1	1	1	1	1	1	1

NPV (in FCFA); IRR (in %) and y (in years)

[1)] Calculation done by ha.

[2)] A positive net present value cannot be achieved

Note: In case the micro-project achieved a positive return within the first year, the IRR is not calculated.

Table 3: SILEM Financial returns of the fruit trees [1)]

Criteria	Baseline	Low cost		Low Revenues		High Cost		High Revenues	
		10%	50%	10%	50%			10%	50%
GOYAVIERS									
B/C	2.53	10.85	20.33	8.60	4.33	8.70	6.11	10.73	15.00
NPV	30,552	5,678,758	5,911,335	5,000,408	2,519,585	5,562,469	5,329,892	6,240,819	8,721,641
IRR	45%	84%	111%	75%	53%	76%	64%	84%	97%
y	5	5	5	5	5	5	5	5	5
MANGUIERS									
B/C	1.36	3.22	6.59	3.41	1.89	2.45	1.53	4.17	5.68
NPV	16,397	3,154,392	3,590,086	3,710,897	2,057,015	2,936,544	2,500,850	4,537,838	6,191,719
IRR	31%	53%	78%	361%	298%	45%	34%	384%	423%
Y	5	5	5	5	5	5	5	5	5

NPV (in FCFA); IRR (in %) and y (in years)

[1)] Calculation done by ha.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Yves Coffi Prudencio	Sr Ag. Services Specialist	AFTS4	TTL
Jane C. Hopkins	Sr .Agric.Specialist	AFTAR	TTL
Mamadou Yaro	Sr. Financial Specialist	AFTFM	Financial Management
Emmanuel Y. Emmanuel	Sr. NRM Specialist	AFTEN	NRM & CDD
Gwladys N. I. Kinda	Team Assistant	AFMBF	Team Assistant
Bepio C. Bado	Sr. Operations Officer	AFTPR	Operations
Dirk N. Prevoo	Sr. Operations Officer	AFTS4	Operations
Abdoul-Wahab Seyni	Social DevelopmentSspecialist	AFTSD	Social Safeguards
Amadou Konare	Environment Specialist	AFTEN	Environment Safeguards
Jean Michel Pavy	Sr. Biodiversity Specialist	AFTS4	Biodiversity
Virginie Vaselopulos	Language Program Assistant	AFTEN	Language Program Assistant
William Dakpo	Procurement specialist	AFTPC	Procurement
Supervision /ICR			
Bepio C. Bado	Sr. Operations Officer	AFTPR	Operations
Ibrahim B. Nebie	Sr. Ag. Services Specialist	AFTAR	Rural Issues
Suzanne Essama	Sr. Operations Officer	AFTDE	Operations
Emmanuel Y. Nikiema	Sr. NRM Specialist	AFTEN	TTL
Abdoul-Wahab Seyni	Social Development specialist	AFTSD	Social Safeguards
Amadou Konare	Environment Specialist	AFTEN	Environment Safeguards
Mamata Tiendrebeogo	Procurement Specialist	AFTPC	Procurement
Aboubacar Diallo	Procurement Specialist	AFTPC	Procurement
Begnadeyi Claude Bationo	Operation Officer	AFMBF	M&E
Suzane Rayaisse	Procurement Analyst	AFMBF	Procurement
Gwladys N. I. Kinda	Team Assistant	ABMBF	Team Assistant
Aguiratou Savadogo-Tinto	Sr. Transport Specialist	AFTTR	Infrastructures
Catherine Desiree Gamper	Consultant	SASDU	M&E
Ousmane M. Kolie	Sr. Financial Mgt. Specialist	AFTFM	Financial Management

Dirk N. Prevoo	Sr. Operations Officer	AFTEN	Operations
William Dakpo	Procurement Specialist	AFTPC	Procurement
Lionel Yaro	Public Info. Assistant	AFRSC	Communication
Henri Mensah	Consultant	AFRSC	Communication

(b) Staff Time and Cost (from SAP)

Stage of Project Cycle	Staff Time and Cost	
	No. of Staff Weeks	US$ Thousands (including travel and consultant costs)
Lending		
FY2000 BBGEF	7.63	27,328
FY2001 BBGEF	20.91	64,340
FY2002 BBGEF	30.07	94,149
FY2003 BBGEF	19.92	59,500
FY2003 BBFAO	0	25,000
FY2004 BBGEF	28.75	108,559
LEN TOTAL:	**107.28**	**378,876**
Supervision/ICR		
FY2004 BBGEF	1.27	2,646
FY2005 BBGEF	21.35	49,849
FY2006 BBGEF	13.49	16,502
FY2007 BBFAO	0	19,800
FY2007 BBGEF	6.99	13,671
FY2008 BBGEF	16.05	33,004
FY2009 BBGEF	17.45	37,171
FY2010 BBGEF	13.63	38,702
FY2011 BBGEF	12.50	48,165
SPN TOTAL	**102.73**	**259,510**
GRAND TOTAL	**210.01**	**638,386**

Annex 5. Beneficiary Survey Results

A beneficiaries' perception study of the impact of SILEM was conducted in 2009. The objective was to collect views from the beneficiaries on SILEM's approach, its implementation and the impact on SILEM's activities on environment (soil, vegetation, water, fauna and flora), income (agricultural, pastoral, forestry, etc..) and social issues (conflict reduction, food security, etc.). The study was carried out in 56 villages in the provinces of Kouritenga, Kompienga, Soum and Sanmatenga where the Project provided support. The survey was administered to the beneficiary population, local government and commune representatives, NGOs, other organizations and the PIU.

The main conclusions of this survey are summarized as follows:

Approach and implementation of SILEM

- The process of planning SILEM actions, the development of partnerships, the organizations created to implement the project, and the monitoring mechanisms of SILEM's activities were high points in the Project implementation.
- Overall, SILEM's stakeholders (PIU, the beneficiaries, technical services, local government and communities involved) expressed their satisfaction with the approach of the project, described as participatory and empowering to actors that are direct beneficiaries.
- Rural communities were satisfied with SILEM's approach that has empowered them in development planning (development of the watershed plan "PGIE" and the annual investment plan "PAI"), implementation of micro-projects (choice of providers, in-kind contribution of population), and close monitoring of the micro-projects (by the Village Development Councils (CVD), the Management Committee).
- The deconcentrated Technical Services of the Ministry of Agriculture, Water and Fisheries (MAHRH), of Animal Resources (MRA) and others noted the appropriateness of the participatory approach SILEM with national guidelines, including legislative texts of decentralization related to CVDs responsibilities.
- The main shortcomings identified in the project's approach concerned (i) the communication gap between the PIU staff of SILEM in Sanmatenga and some stakeholders as well as the insufficient involvement of the PIU staff in the implementation of micro-projects and (ii) the insufficient involvement of the deconcentrated technical services at the Kompienga province.

Implementation of SILEM's activities

Component 1 - Local capacity building component (RCL): The stakeholders involved highlighted that various micro-projects were carried out, starting in 2006 till the first half of 2009. They were satisfied with the relevance of the activities as well as the know-how they had acquired in IEM. The overall physical implementation rate of the component came to 81%, underscoring its achievements. The respondents also noted that, at times, the training duration was too short, and a more systematic review related to the lessons learned of the study tours could have been done.

Component 2 - local investment fund (LIF): SILEM's direct beneficiaries strongly appreciated the results achieved under this component. They considered the activities as relevant and of quality. The main quantitative targets of this component were largely met or exceeded while the physical implementation rate reached 94%. The achievements are evidenced by the strong demand in micro-projects supporting demarcation of sites, restoration of soil and water conservation land.

However, some beneficiaries believed that the CVD should have mobilized financial resources that would have funded the supervision activities carried out by the CVD in general. It was noted that members of the CVD often abandoned their own activities to benefit from community activities supported by the project. In addition, it has been also lamented that the project did not taken into account the financing activities related to the protection of the sites (e.g. fencing) and other supportive activities (e.g. babysitting fees, etc).

Component 3 - institutional Capacity Building : Stakeholders judged the implementation of the component satisfactory. It achieved a 78% implementation rate. Various awareness raising and information sessions on SILEM and the communication tools (plays, radio and appreciation) which were translated into the local languages were positively assessed.

Component 4 - Capacity Building component of national stakeholders to access the carbon markets : It was noted that the implementation of this component was difficult. The component included a number of innovative elements (i.e. scientific evaluation before and after the implementation of micro-projects, obtaining funds through the carbon market, etc.) which had not been well developed during project preparation. Another constraint was the insufficient resources available to prepare a project proposal for a plantation project to be submitted for funding by the carbon fund. With an overall physical implementation rate of 67%, the component supported mainly studies, field trips (to other regions) and international study tours.

Component 5 - Administration management and monitoring and evaluation : It was noted that the monitoring and evaluation system was in general operational. The targets of most of SILEM's performance indicators were met or exceeded, with the exception of the indicator on the number of carbon projects. The overall implementation rate of the component (in terms of physical realizations) was estimated at 92%.

Impact of the project

The project has had beneficial impact starting at the mid-term, including the gradual emergence of plants and animal species, the recovery of degraded land, gains in agro-pastoral productivity and fisheries, reduced conflicts between farmers and cattle farmers and capacity building of CVDs in planning, implementation and monitoring / evaluation of community activities.

Annex 6. Stakeholder Workshop Report and Results

Not available.

Annex 7. Summary of Borrower's ICR

I. Contexte, Objectif et Conception du Projet

1.1 Contexte à l'évaluation du SILEM

Pays enclavé sans débouché sur la mer, le Burkina Faso fait partie des dix pays les moins développés du monde. Bien que l'incidence de la pauvreté urbaine ait pratiquement doublé entre 1994 et 2003, passant de 10,4% à 19,9%, on notait que la pauvreté était principalement rurale avec plus de 92% de la population vivant en dessous du seuil de pauvreté. Les principales sources de revenu pour les plus pauvres sont liées à l'exploitation des ressources naturelles. En dépit de cet état de dépendance des populations rurales vis-à-vis des ressources naturelles, on notait par ailleurs une dégradation accélérée desdites ressources due aux modes de gestion inappropriés. Pour faire face à ces contraintes, le Burkina Faso a élaboré des stratégies nationales et des plans d'action à long terme. Le Programme de Gestion Intégrée des Ecosystèmes des Plaines et des Bas-fonds du Sahel (SILEM) a été conçu pour aider le gouvernement à mettre en œuvre de manière efficace les plans d'action nationaux destinés à arrêter et à inverser la tendance de dégradation des ressources naturelles. Pour ce faire, SILEM a complété le Deuxième Programme National de Gestion des Terroirs (PNGT2) du Burkina Faso (le projet de base) en introduisant une dimension géographique et une approche de Gestion Intégrée de l'Ecosystème (GIE) dans la planification du développement local.

1.2 Objectifs de développement initiaux et indicateurs clefs du projet

Le programme prévu pour une durée de 15 ans en trois phases quinquennales, visait à restaurer les sols et l'eau et à conserver durablement la diversité biologique des bassins versants choisis. A l'échelle nationale, il devait conduire à : (i) une réduction du rythme de désertification, (ii) une capacité accrue de séquestration du carbone, (iii) une réduction de la vulnérabilité environnementale et sociale aux changements climatiques, (iv) une meilleure sécurité alimentaire et de meilleures possibilités de revenus pour les ménages ruraux. **L'objectif de développement de cette phase pilote de cinq ans** était d'améliorer des pratiques de gestion de ressources naturelles des sous bassins versants ciblés.

Les principaux indicateurs clefs du projet sont : (i) le degré de fonctionnalité du Cadre de Coordination et de Concertation des Micros Bassins Versants (CCMBV) ; (ii) le nombre de microprojets de gestion intégrée des écosystèmes financés et entièrement exécutés ; (iii) le pourcentage des microprojets exécutés ayant reçu une évaluation positive ; (iv) le niveau d'achèvement de la préparation des Plans de Gestion Intégrée des Ecosystèmes des Micros Bassins Versants (PGIE /MBV) ; (v) le nombre de projets de Mécanismes de Développement Propre (MDP) initiés ; (vi) le degré d'efficacité du système de suivi d'impact.

1.3 Principaux bénéficiaires

Pour la première phase, les bénéficiaires directs du SILEM étaient les populations rurales vivant dans les micros bassins versants choisis dans les provinces du Soum, du Sanmatenga, du Kourittenga et de la Kompienga, soit environ 120 villages et 12 000 ménages.

1.4 Composantes

Le SILEM a été mis en œuvre à travers cinq composantes, à savoir :

Composante 1 : Le Renforcement des capacités locales en gestion intégrée des écosystèmes (RCL/GIE) qui prenait en compte l'appui des communautés à la planification, à la concertation/coordination, à l'organisation et à leur formation sur divers thèmes relatifs à la gestion intégrée des ressources naturelles;

Composante 2 : Le Fonds d'investissement local (FIL) à travers lequel les ressources financières ont été mises à la disposition des villages et des provinces pour la réalisation des investissements dont ils assuraient la maîtrise d'ouvrage ;

Composante 3 : Le Renforcement des capacités institutionnelles (RCI) qui permettait d'apporter l'appui nécessaire aux services techniques, aux associations et ONG en vue d'un encadrement technique des communautés dans la mise en œuvre des activités ;

Composante 4 : Le Renforcement des capacités des acteurs nationaux à accéder aux marchés de carbone qui visait à appuyer les communautés à formuler des projets éligibles aux marchés de crédits de carbone ;

Composante 5 : L'Appui incrémental à l'administration, la gestion et le suivi évaluation qui permettait de supporter le fonctionnement et la mise en œuvre du dispositif de suivi des performances et des impacts du projet.

1.5 Modifications intervenues

Réallocation budgétaire

Il avait été prévu un nombre limité de microprojet à financer à travers le FIL (480 microprojets à la fin du projet). L'accent avait été plutôt mis sur le renforcement des capacités locales et institutionnelles. Cette prévision tenait compte de l'expérience de la première phase du PNGT2 durant laquelle on avait noté une faible demande en investissement pour la gestion des ressources naturelles, la plus grosse part de la demande ayant été orientée vers les investissements socio-économiques. Mais après avoir conduit les actions de sensibilisation et de communication dès le démarrage du projet, la demande communautaire en microprojets de gestion des ressources naturelles exprimée dans les plans de gestion intégrée des écosystèmes s'est avérée plus ambitieuse que la prévision initial.

Une réallocation budgétaire a été effectuée courant 2009 pour permettre d'une part de budgétiser les ressources non allouées et d'autre part de réduire les ressources prévues au titre des composantes RCL et renforcement des capacités des acteurs nationaux à accéder au marché de carbone au profit de la composante FIL. Cette réallocation se justifie par le fait que les coûts des formations techniques sont, dans la pratiques, souvent intégrés à ceux des micros projets prévus dans le FIL et contribue plus efficacement à l'atteinte des objectifs d'apprentissage (*learning by doing*).

Composante « Renforcement des capacités des acteurs nationaux à accéder aux marchés de carbone »

L'objet de cette composante était d'élaborer cinq projets MDP devant être financés par les partenaires privés mais la mise en œuvre comportait des difficultés. Ces difficultés étaient inhérentes au fait que les projets MDP devaient être portés par des acteurs privés dont la plupart étaient insuffisamment informés des mécanismes pratiques de mise en œuvre de tels projets. Par ailleurs, ces acteurs n'étaient pas prompts à prendre le risque d'investir dans un projet qu'ils maîtrisaient peu et dont les retombées économiques ne sont pas immédiates. La mission de revue à mi-parcours intervenue en mai 2007 avait donc recommandé le redimensionnement des résultats attendus de cette composante pour les limiter à l'information et au renforcement des capacités des acteurs, notamment du secteur privé puis au partage des expériences entre les acteurs burkinabés et ceux des pays voisins qui mettent en œuvre des projets similaires.

Prorogation de la date de clôture du projet

La date de clôture initiale du projet était prévue au 30 juin 2009. Mais au regard de la nécessité de consolidation des actions réalisées pour garantir leur durabilité, la mission de supervision de décembre 2008 avait recommandé la prorogation de la date de clôture au 31 décembre 2010.

II. PRINCIPAUX FACTEURS AFFECTANT L'EXECUTION ET L'ATTEINTE DES RESULTATS DU PROJET

2.1 Préparation du projet, conception et entrée en vigueur

Préparation du projet

En 2001, le gouvernement burkinabé avait sollicité et obtenu du Fonds Mondial pour l'Environnement (FEM) 340 000 dollars US en vue d'assurer la préparation du SILEM (Sahelian Integrated Lowland Ecosystem Management). Pour ce faire, un nombre des études techniques avaient été réalisées. Initialement, il avait été envisagé que le démarrage du SILEM coïncide avec celui de la première phase du PNGT2 dont la mise en œuvre a commencé en 2002. Mais compte tenu du délai de préparation qui était relativement long (3 ans), il y a eu un décalage entre le début du SILEM et celui du PNGT2. Cela avait nécessité un réajustement du dispositif organisationnel au cours de la mise en œuvre du projet.

Le processus de préparation avait impliqué les départements ministériels en charge de l'Environnement et du Cadre de Vie (MECV), des Ressources Animales (MRA), de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques (MAHRH) ainsi que de la Recherche Scientifique (MESSRS). La collaboration des partenaires financiers dans la préparation du projet a été optimale.

Conception

La prise en compte des différentes zones agro-écologiques du Burkina Faso pour la mise en œuvre de la phase pilote a permis de disposer de résultats extrapolables sur toute l'étendue du territoire national. Pourtant, de toutes les cinq composantes du projet, seule celle relative au Renforcement des capacités des acteurs nationaux à accéder aux marchés de carbone a connu des difficultés de mise en œuvre du fait qu'elle n'était pas suffisamment clarifiée dans le document du projet. En effet, compte tenu du temps de préparation qui s'était déjà écoulé, il était prévu qu'un consultant international soit recruté après le démarrage du projet pour aider à préciser et opérationnaliser le contenu de la composante alors que des résultats quantitatifs étaient déjà ciblés dans le cadre de résultats du projet.

2.2 Mise en œuvre

(a) Les principaux facteurs ayant influencé positivement l'éxecution du projet

- La mise en œuvre des actions de Gestion Intégrée des Ecosystèmes à travers le SILEM dans les provinces d'intervention du PNGT2 a favorisé l'adhésion des communautés de base dont les besoins socio-économiques étaient pris en compte par ce dernier. Il y a eu ainsi une **complémentarité et une synergie entre le PNGT2 et le SILEM** sur le terrain.

- **L'implication des services techniques et des autorités administratives des provinces** concernées dans le choix des micros bassins versant d'intervention du SILEM a contribué à une meilleure atteinte des résultats.

- Conçu pour quinze ans en trois phases de 5 ans, la mise en œuvre de la phase pilote a suscité **une grande motivation au niveau des différents acteurs**, ce qui a contribué à l'atteinte des résultats prévus y compris les déclencheurs de la phase suivante. Le renforcement des capacités a été un facteur déterminant dans l'atteinte des résultats du projet. Il s'est opéré à travers d'une part le RCL et d'autre part le FIL qui a

constitué une opportunité d'appropriation des techniques de Gestion Intégrée des Ecosystèmes (GIE) par les populations à travers le « learning by doing ».

- **L'élaboration des Plans de Gestion Intégrée des Ecosystèmes** (PGIE), établie à travers un approach participative, **reflets les besoins par les populations elles-mêmes et répondant aux normes techniques** en la matière. L'extraction des Plans Annuels d'Investissement (PAI) à partir des PGIE et leur mise à jour ont favorisé la prise en compte de l'évolution des besoins des populations avec le temps.

- La **non exigence de contribution financière** pour la réalisation des activités de GRN a favorisé une forte adhésion des communautés qui s'est traduite par une plus grande mobilisation de leur contribution en nature dépassant même souvent la subvention accordée par le projet

- La **tenue régulière des rencontres de concertation inter-villageoises** sur la mise en œuvre du projet a permis des échanges d'expériences, une planification concertée et harmonisée et une synergie d'actions sur le terrain.

(b) Quelques facteurs ayant influencé négativement l'éxecution du projet

- En ce qui concerne **la composante relative au renforcement des capacités des acteurs nationaux à accéder au marché de carbone**, a l'occasion d'un mission d'un consultant indépendant il a été mis en évidence le **caractère ambitieux des résultats initialement prévus**. Néanmoins, deux idées de projets MDP ont été identifiées.

- Lorsqu'un **micro bassin se trouve à cheval entre deux provinces qui n'appartiennent pas à la même région** (cas du micro bassin versant de la Kompienga), **la coordination administrative apparaissait assez complexe** et trop couteuse par rapport aux ressources financières prévues. Cela a conduit le projet à travailler dans la partie du micro bassin versant qui se trouve dans les limites de la province.

- Lors de l'adoption du code général des collectivités territoriales ce qui a eu comme resultatant dans la création des conseils municipaux et des Conseils Villageois de Développement (CVD), un **renouvellement des formations** au profit des membres des CVD a été necessaire.

- La **fluctuation à la baisse du cours du dollar** a affecté le montant global du projet. En effet, initialement évalué sur la base de 1 dollar USD= 600 FCFA, la perte subie du fait de la baisse du cours du dollar.

2.3 Système de suivi évaluation

(a) Les acquis :

- Le dispositif de suivi-évaluation a permis de rendre compte régulièrement des performances et d'opérer les ajustements nécessaires à la bonne exécution du projet. Il est adapté au mode d'intervention participatif, impliquant et responsabilisant les acteurs depuis le niveau village jusqu'au niveau central.

- Quant au suivi des impacts, assuré par l'Union Internationale pour la Conservation de la Nature (UICN), un manuel de suivi d'impact du SILEM a été élaboré et adopté par le comité consultatif scientifique et technique (CCST) en 2006 et la situation de référence pour les indicateurs retenus a été établie en fin 2006. De plus, les données sur les impacts ont été régulièrement collectées et le rapport final a été produit en 2010.

- Des études ponctuelles ont permis de compléter les domaines d'impact ci-dessus, notamment l'enquête sur la perception des bénéficiaires, l'évaluation économique et financière des investissements, l'audit technique et financier des investissements.

(b) Les défis :

- La meconnaissance précise des aménagements à l'avance
- Le long temps mis pour rechercher un partenariat et conclure le protocole de collaboration;
- Le long délai de finalisation des travaux préliminaires, notamment l'élaboration de la méthodologie de suivi d'impact et sa validation par le CCST qui eu pour conséquence l'établissement tardif de la situation de référence (un an et demi après le démarrage du projet) ;
- Un coût relativement élevé des analyses scientifiques dans les laboratoires qui n'a pas permis d'analyser la totalité des échantillons collectés sur le terrain ;
- Des indicateurs retenus prennent forcément un certains temps pour évoluer notablement alors que le délai d'observation a été relativement court (3 ans seulement). Par conséquent, le dispositif n'a permet d'observer que les premiers effets des aménagements réalisés.

2.4 Conformité aux politiques de sauvegarde environnementale /sociale et de gestion fiduciaire

Le projet est classé en catégorie B conformément aux politiques de sauvegarde environnementale et sociale de la Banque Mondiale. Compte tenu de l'effet cumulatif de nombreux micros projets mis en œuvre par le projet, un cadre de gestion environnemental et social et un cadre de politique de réinstallation ont été élaborés après consultation des acteurs. Les politiques de sauvegarde activées concernent : (i) l'évaluation environnemental (OP 4.01, BP 4.01, GP 4.01) et (ii) Réinstallation involontaire (OP/BP 4.12).

L'application des dispositions prévues dans ces cadres a permis d'atténuer par anticipation les impacts négatifs potentiels. **L'utilisation de la grille de veille environnementale et sociale** pour la sélection des micros projets et l'élaboration des procès-verbaux de cession des sites d'investissements communautaires ont permis d'identifier et de financer des activités à faible impact environnemental et social négatif, de prévoir des mesures d'atténuation pour les microprojets comportant des risques environnementaux et/ou sociaux puis d'assurer la sécurisation des investissements.

Des mesures de mitigation environnementale et sociale prévues ont été effectivement mises en œuvre sous forme de compensation en fosses fumières, cordons pierreux et en renforcement de capacité sur le zaï et les foyers améliorés, etc. L'audit environnemental et social des actions a jugé que la mise en œuvre du SILEM conforme au CGES.

Les audits de gestion comptables et financiers ainsi que de la passation des marchés ont été régulièrement conduits par des cabinets indépendants ainsi que par des experts de la Banque Mondiale et des avis favorables ont toujours été émis, sans réserves particulières.

2.5 Actions post-clôture du projet (perspectives)

Le SILEM a été conçu sous-forme de programme de 15 ans à exécuter en trois phases quinquennales, pour accompagner la mise en œuvre du PNGT2 qui est le programme de base. La phase pilote qui fait objet du présent rapport a permis de tester l'approche de gestion intégrée des écosystèmes et d'atteindre des résultats et des impacts forts appréciables.

La seconde phase était sensée assurer l'extension géographique de l'approche, tout en la consolidant sur la base des leçons apprises de la mise en œuvre de la phase pilote et des problématiques naissantes. La mise en œuvre de cette phase pilote a mis en évidence l'efficacité de l'approche pour la prise en charge, en parfaite synergie, des contraintes relatives la dégradation des terres et de la biodiversité ainsi l'adaptation aux effets de la variabilité

climatique. A cet effet, une note d'idée de projet a été esquissée et pourrait être développée et enrichie en vue de l'élaboration d'un document d'évaluation de la seconde phase.

III. EVALUATION DES RESULTATS

3.1 Pertinence des objectifs, de la conception et de la mise en œuvre du projet

L'objectif de développement, l'approche et la démarche de mise en œuvre ont été pertinents. En effet, la problématique de gestion durable des ressources naturelles, base de l'économie nationale, reste un challenge majeur pour le gouvernement, les collectivités décentralisées et la société civile au Burkina Faso. Elle est exacerbée ces dernières années par des évènements climatiques extrêmes tels que les sécheresses et les inondations qui accroissent la vulnérabilité des populations rurales les plus pauvres. Les objectifs du projet sont en conformité avec les orientations politiques et stratégiques du gouvernement; en témoigne l'élaboration récente des instruments tels que la loi portant Code Général des Collectivités Territoriales (CGCT) au Burkina Faso promulgué le 14 avril 2005, la Stratégie de Croissance Accélérée et de Développement Durable (SCADD) en cours d'élaboration pour remplacer le Cadre Stratégique de Lutte Contre la Pauvreté (CSLP) et un nombre de programmes visant de renforcer les capacités des villages et des collectivités locales à planifier et réaliser les investissement, d'ameliorer la gestion durable de la terre et s'atteler la vulnérabilité aux changements climatiques. Au niveau local, le diagnostic réalisé lors de l'élaboration des PGIE des micros bassins versants a confirmé également la pertinence des objectifs du projet. En effet, les agro-écosystèmes, les écosystèmes humides, aquatiques et sylvo-pastoraux identifiés présentent plusieurs contraintes de gestion.

3.2 Niveau d'atteinte des objectifs de développement

Les **objectifs de développement du projet ont été largement atteints**. Sur une prévision de 120 villages, l'intervention du projet a concerné les communautés de 160 villages répartis dans quatre micros bassins versant. Du fait de l'action du projet, les communautés cibles ont acquis les capacités : (i) de planification holistique du développement intégrant la gestion durable des ressources naturelles et la résolution des problèmes socio-économiques ; (ii) de coordination inter-communautaire pour la gestion des ressources partagées à l'échelle micro bassin versant ; (iii) d'assurer la maîtrise d'ouvrage et l'exécution technique des micros projets de gestion des ressources naturelles. L'implication des services techniques et de l'administration locale dans la planification, la mise en œuvre et le maintien des investissements constitue une base de durabilité des acquis.

L'appréciation des bénéficiaires du SILEM[61] indique que les effets imputables aux actions du projet ont été jugés positifs et ont concerné (i) l'environnement (apparition progressive d'espèces végétales et animales, renforcement du potentiel floristique et faunique au niveau des forêts villageoises et des mises en défens, économie du bois de chauffe par l'utilisation des foyers améliorés et récupération de 1 000 ha de terres dégradées), (ii) les revenus (gain de productivité en raison de l'application des techniques d'intensification) et (iii) le niveau social (réduction de conflits entre agriculteurs et éleveurs, rapprochement entre les villages, renforcement des capacités des CVD).

L'évaluation des activités de DRS/CES[62] a été conduite en 2009. Elle a porté sur les aménagements réalisés par les producteurs de 2006 à 2008 avec l'appui du SILEM. Il ressort de cette étude que: (i) l'aménagement des exploitations agricoles en cordons pierreux permet d'accroître le rendement des spéculations céréalières de 24% ; (ii) l'utilisation de la fumure organique issue des fosses fumières induit un accroissement de rendement de 35,23% ; (iii) le traitement des ravines par l'utilisation de sacs en jute remplis de mottes de terres combinée à la végétalisation, a permis leur comblement en deux saisons.

L'ensemble des **indicateurs clefs du SILEM a été atteint** et se présente comme suit :

[61] SILEM, Etude sur l'appréciation des actions du SILEM par les bénéficiaires, 2009
[62] Evaluation des effets des aménagements de DRS/CES réalisés avec l'appui du SILEM dans la province du Kouritenga

- **Le degré de fonctionnalité du Cadre inter-villageois de Coordination et Concertation des micros bassins versants** : Cet indicateur composite a reçu la note de 40 points sur 40, soit 100% de la note cible. Les communautés à travers le CCIV extraient régulièrement du PGIE des PAI qu'ils mettent à jour et exécutent.

- **Nombre de microprojets financés et entièrement exécutés** (Cible= 150 à l'an 3 et 480 à l'an 6): La cible de cet indicateur est largement dépassée. En effet, 2 971 micros projets villageois et inter-villageois de gestion des ressources naturelles ont été réalisés sur une prévision initiale de 480 micros projets financés en fin de projet. Ces microprojets ont concerné les domaines suivants: (i) reboisement et gestion des ressources forestières; (ii) la défense et restauration des sols /gestion de la fertilités des sols; (iii) l'amélioration de la production animale ; (iv) l'amélioration de la production végétale ; (v) amélioration de la production halieutique; la recherche-actions.

- **75% des microprojets exécutés ayant reçu une évaluation positive par les bénéficiaires et 65% par le projet**: L'étude sur la perception des bénéficiaires a fait ressortir une appréciation positive des réalisations du projet par l'ensemble des bénéficiaires enquêtés. Cela a été confirmé par l'audit indépendant des investissements financés à travers le FIL. Cet audit a permis de noter que 100% des micros projets financés ont été réalisés et que 98% des réalisations sont jugés satisfaisantes.

- **Niveau d'achèvement de la préparation des PGIE des micros bassins versants** (cible en fin de projet: note au moins égale à 18 points sur 24) : Cet indicateur composite a évalué la qualité du processus de planification communautaire qui a abouti au PGIE. Il a reçu la note de 24 points sur 24. Les communautés ont acquis les capacités d'identifier les contraintes de leur milieu, de planifier des actions au niveau villageois et de les mettre en cohérence à l'échelle des micros bassins versants ciblés.

- **Degré d'efficacité du système de suivi d'impact** (20 points par province, 80 en tout) : Cet indicateur a été entièrement atteint et a obtenu la note de 80 points sur 80. En effet, un manuel de suivi d'impact, incluant la méthodologie et la description du dispositif, a été élaboré par l'UICN et adopté par le CCST. Le rapport sur la situation de référence a également été élaboré. La collecte et l'analyse des données ont concerné la période de 2007 à 2009. Le rapport final a été déposé en 2010. Des études ponctuelles sur les effets du projet ont été réalisées.

3.3 Efficience du projet

L'efficience du projet est clairement mise en évidence à travers l'analyse coût/avantage et de la rentabilité financière des investissements réalisés. L'évaluation économique[63] indique que les aménagements sont rentables dans toutes les quatre provinces et que d'une manière générale, les aménagements sont plus rentables dans la Kompienga, suivie du Kouritenga, du Sanmatenga et enfin du Soum (voir calcul de VAN et TRI en annexe ….). Ce gradient de rentabilité croissante est positivement corrélé avec le gradient pluviométrique. Cette efficience s'explique également par l'approche de responsabilisation des communautés pour la maîtrise d'ouvrage des investissements, à travers leurs structures représentatives que sont les conseils villageois de développement (CVD). Par ailleurs, les investissements à caractère individuel (fosses fumières, cordons pierreux, zaï et arbres fruitiers) font preuve d'une viabilité financière robuste.

3.4 Justification de l'appréciation globale des résultats

Les résultats atteints par le projet sont jugés satisfaisants. En effet, l'ensemble des indicateurs clefs est atteint ou dépassé. Le projet a généré des effets et des impacts positifs significatifs sur les conditions de vie, sur l'environnement biophysique et sur les capacités des acteurs tant au niveau local que national.

[63] Evaluation économique des investissements réalisés par le projet SILEM dans quatre micro bassins versants

3.5 Autres résultats et impacts

Les résultats inattendus du projet concernent principalement l'émergence d'une paix sociale entre les groupes sociaux professionnels, notamment entre les agriculteurs et les éleveurs. En effet, depuis 2006, année de mise en œuvre effective des activités du SILEM, les conflits entre agriculteurs et éleveurs ont connu un apaisement notoire dans les quatre provinces d'intervention, en raison notamment des actions d'information/sensibilisation, de délimitation de zones de pâture et de pistes à bétail avec des règles internes de gestion. A titre illustratif, il a été signalé qu'au Kouritenga, le nombre de conflits enregistrés par an est passé de 22 cas officiels en 2006 à zéro cas en 2009. De même, les constats de dégâts causés par les animaux en divagation ont beaucoup diminué. Par ailleurs, il a été constaté un plus grand rapprochement entre les villages du fait des différentes rencontres inter-villageoises de concertation et de coordination pour la gestion des ressources naturelles partagées et un renforcement des capacités des CVD en planification, exécution et suivi/évaluation des activités de gestion des ressources naturelles communautaires.

Impacts sur les conditions de vie des populations bénéficiaires

Au niveau des revenus. La vulgarisation des méthodes CES/DRS par le projet a conduit à (i) une maîtrise des techniques culturales de production, (ii) une amélioration des rendements agricoles. (iii) une meilleure sécurité alimentaire et (iv) une augmentation des revenus. Certaines actions comme la délimitation de zones de chasse, les sites de frayères et l'élevage d'aulacodes ont procuré des revenus directs aux bénéficiaires. Les revenus générés contribuent au paiement de frais de scolarité, de santé et à l'acquisition d'équipements, toutes choses qui contribuent à l'amélioration des conditions de vie des bénéficiaires. Les surplus agricoles commercialisés sont perçus comme des facteurs contribuant positivement à l'économie locale par l'approvisionnement régulier de la province tendant à maintenir les prix plus stables.

Au niveau social. De nombreux acteurs témoignent que les activités du SILEM ont contribué à l'amélioration des conditions de vie des populations et à la cohésion sociale. Par ailleurs, il a été noté que la mise en œuvre des activités a induit une plus grande collaboration entre les services techniques et les villages.

Impacts sur les ressources naturelles. Les effets bénéfiques du projet sur l'environnement sont reconnus par les acteurs et concernent particulièrement : (i) le couvert végétal (par exemple, la recolonisation de certaines forêts villageoises par l'apparition progressive d'espèces végétales et animales) (ii) la faune (les espèces évoquées sont notamment les singes, les hyènes, les biches, les chacals, les perdrix et pintades sauvages), (iii) les sols (une récupération de terres dégradées) et (iv) les plans d'eau (une reconstitution des berges des cours d'eau et des plans d'eau).

Impact sur les capacités locales. L'impact des actions du SILEM s'est traduit par le renforcement des aptitudes des CVD à planifier, à assurer la maîtrise d'ouvrages des investissements et à conduire le suivi participatif des activités. Ces capacités sont confirmées au regard du nombre de microprojets (3000) réalisés avec succès.

Impact sur l'environnement institutionnel. La mise en œuvre du SILEM a contribué à la vitalité des organes villageois, notamment des conseils villageois de développement (CVD). Les réunions sont très régulières dans 72% des villages enquêtés, ce qui est assez satisfaisant, même si une amélioration reste à souhaiter. Par ailleurs, la forte implication des services techniques de l'Etat et des ONGs/Associations, convenue sur la base de protocoles d'exécutionont permis de raffermir leur rôle d'appui technique et de contrôle des actions du SILEM. Les services techniques ont estimé que l'approche participative et de responsabilisation des acteurs, en particulier les acteurs directs que sont les populations concernées est en parfaite adéquation avec les orientations nationales.

IV. EVALUATION DES RISQUES POUR LES RESULTATS DE DEVELOPPEMENT (DISPOSITIONS PRISES POUR LA DURABILITE)

Les principaux risques qui étaient associés à la mise en œuvre du projet concernent la durabilité des actions et leur réplicabilité. La maîtrise de ces risques a été intégrée dans la stratégie d'exécution du projet : (i) le renforcement des capacités des CVD sur plusieurs thématiques afin de leur permettre d'être pleinement opérationnelles et

d'assurer efficacement la maîtrise d'ouvrage ; (ii) la dotations de capacités nécessaires aux comités de gestion assurer le respect des règles convenues et initier des actions de restauration et d'exploitation durable ; (iii) la mise en place d'un Cadre de concertation inter villageois ; (iv) l'appropriation des investissements par les bénéficiaires contribuant à l'initiative d'actions endogènes pour restaurer et accroître le potentiel productif et constitue un gage de durabilité ; (v) l'appui aux investissements productifs (aménagement de bas-fonds, élevage des aulacodes, production des plants, création de vergers, de zones de chasse et de frayères …) permttant aux communautés de diversifier leurs sources de revenus (vi) introduire le processus de sécurisation et de pérennisation des investissements ; et (vii) le développement des compétences à travers la stratégie du «faire faire» utilisée par le SILEM a permis de développer au niveau local, les compétences des prestataires privés et publics chargés d'accompagner les CVD dans la réalisation, l'entretien et la maintenance des investissements relatifs à la gestion des ressources naturelles.

Les principaux risques environnementaux et sociaux dans l'exécution du projet ont été également identifiés et des mesures d'atténuation proposées et mises en oeuvre.

V. EVALUATION DES PERFORMANCES DE LA BANQUE MONDIALE ET DU BURKINA FASO

5.1 Performance de la Banque Mondiale

La Banque Mondiale en tant que principal bailleur du SILEM a conduit le processus de préparation et d'évaluation du projet avec succès et les missions régulières de supervision et de revue à mi-parcours du projet. Ces différentes missions ont formulé des recommandations dont la mise en œuvre a apporté des solutions pour le bon déroulement du projet. Par ailleurs, les requêtes (Demande de non objection, Demande de Remboursement de Fonds, Rapports de Suivi Financier, Rapports d'audits annuels, etc.) soumises par le Gouvernement ont toujours été traitées de façon diligente.

5.2 Performance de l'emprunteur

Le Gouvernement

La performance du Gouvernement dans la préparation du Programme est jugée moyenne au regard de durée de la phase de préparation (3 ans). La performance du Gouvernement dans la mise en œuvre du projet est jugée satisfaisante (Suivi régulier du projet, tenue régulière des comités de pilotage, déblocage à temps de la contrepartie).

L'unité d'exécution du projet

La performance de l'organisme d'exécution est satisfaisante. Les programmes d'activités et budgets annuels, les rapports d'activités trimestriels et annuels ainsi que les rapports d'audits sont soumis dans les délais au comité de pilotage et aux partenaires techniques et financiers. Les missions de supervision et de revue à mi-parcours ont été bien préparées. Le Projet a, en outre, réalisé un bon taux de décaissement 100% au 30 juin 2010.

VI. LEÇONS APPRISES DE LA MISE EN ŒUVRE DU SILEM

- La disposition avec les CVDs comme porteurs de micros projets villageois a facilité les procédures de décaissement des fonds au profit des populations bénéficiaires.
- La contribution des populations bénéficiaires à la mise en œuvre des actions surtout sous forme de main d'œuvre a amélioré de manière significative l'exécution des actions.
- La démarche du projet a intégré une bonne communication avec les partenaires techniques et privés et les populations bénéficiaires à travers les cadres de concertation provinciaux, les protocoles/contrats d'exécution, les rencontres inter villageoises, etc.

- L'instauration d'un processus endogène de négociation et de concertation adoptée dans la mise en œuvre des actions de gestion des ressources naturelles a contribué à la réduction des conflits sociaux.
- La pertinence de l'approche spatiale « micro bassin versant » a permis (i) aux communautés de faire une planification concertée de la gestion des ressources naturelles à une échelle spatiale plus étendue et d'agir localement dans un cadre cohérent et (ii) de mettre en évidence l'interdépendance d'une part, entre les différentes composantes biophysiques de l'environnement et d'autre part entre les populations qui partagent un même bassin versant.
- La démarche adoptée pour la sécurisation des investissements communautaires (qui va de la sensibilisation/négociation à la prise d'arrêté de reconnaissance officielle) est pertinente dans la mesure où elle assure la durabilité des aménagements.
- La sélection des micros projets à travers la grille de sélection de la banque mondiale a permis de retenir les micros projets à faible impact négatif sur l'environnement et le social et de proposer des mesures d'atténuation ou de compensation.
- Dans le contexte de la communalisation, l'élaboration des PCD doit intégrer l'approche bassin versant pour prendre en compte la gestion des ressources partagées inter-communales.
- Les communautés ne disposent pas toujours de paquets techniques ou technologiques diversifiés pour faire le choix de la solution la mieux adaptée, d'où la nécessité de mettre à leur disposition un recueil de techniques pour les contraintes les plus courantes.

Commentaires sur les problématiques naissantes

Outre la dégradation des terres et la perte de biomasse et de la biodiversité, la prise en compte des stratégies et techniques d'adaptation aux effets des changements climatiques dans les domaines de l'agriculture, l'élevage, la foresterie et l'eau, constitue une problématique importante pour les projets similaires à mettre en œuvre à l'avenir.

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

Not available.

Annex 9. List of Supporting Documents

1. Project Concept Note, March 2002
2. SILEM, Project Appraisal Document, May 2004
3. Global Environment Facility Trust Fund Grant Agreement between Burkina Faso and the IBRD, July 14th 2004
4. Aide-mémoire de la mission de préparation du SILEM (26 Juin au 5 Juillet 2000)
5. Aide-mémoire de la mission de préparation (29th Avril 2004)
6. Aide-mémoire de la mission de supervision du PNGT2 et du SILEM (21 novembre au 04 décembre 2005
7. Mission de Supervision du PNGT2 et du SILEM (5 au 23 Juin 2006)
8. Mission de Supervision finale du PNGT et de Revue à mi-parcours du projet SILEM (13 au 29 mai 2007)
9. Mission de Supervision du SILEM (28 au 30 Janvier 2008)
10. Mission de Supervision du PNGT et du SILEM (1er -15 Décembre 2008)
11. Mission de Supervision de SILEM (11 Février – 06 Mars 2010)
12. Supervision financière du PNGT II et revue à mi-parcours du SILEM - Rapport de supervision financière (2 au 18 mai 2007)
13. Project Supervision – Financial Management input to FM rating in ISR, 28th July 2008
14. Mission de Supervision en gestion financière (10 au 13 Décembre 2008)
15. Mission de Supervision en gestion financière (15 au 23 juillet 2009)
16. Mission de Supervision Mars 2010 – contribution de la passation des marchés à l'aide mémoire, Mars 2010
17. Plan de Gestion intégrée des écosystèmes du Micro-bassin versant dans le Kouritenga, Octobre 2005
18. Plan de Gestion intégrée des écosystèmes du Micro-bassin versant de Korsimoro dans la Province du Sanmatenga, Mai 2006
19. Plan de Gestion intégrée des écosystèmes du Micro-bassin versant du lac de barrage de la Kompienga, Septembre 2006
20. Plan de Gestion intégrée des écosystèmes du Micro-bassin versant du Beli (Province du Soum), Novembre 2006
21. UICN, Dispositif de suivi des impacts du SILEM, Février 2006
22. Thiombiano, A et al, 2008 : Suivi d'impact du projet pilote de Gestion intégrée des Ecosystèmes des bas-fonds du Sahel : Rapport final de la situation de référence, SILEM
23. Thiombiano, A et al, 2009 : Suivi d'impact du projet pilote de Gestion intégrée des Ecosystèmes des bas-fonds du Sahel : Rapport final, SILEM, Ouagadougou
24. IIED, Sustainable Development Opinion 2003 Funding Adaptation to Climate Change : What, who and how to funds, 2003
25. World Bank Carbon Finance Business, document pour l'Unité Carbon Finance pour les projets de Changement d'Utilisation des terres et de Foresterie (LULUCF), proposition de projet, Juin 2008
26. Evaluation de l'exécution technique, financière et de la passation des marchés des conventions de cofinancement SILEM/PNGT II 2006, 2007 et 2008, Janvier 2009
27. Evaluation des effets des aménagements de DRS/CES réalisés avec l'appui du SILEM dans la province du Kouritenga
28. Etude sur l'appréciation des actions du SILEM par les bénéficiaires, Octobre 2009
29. Audit Environnemental et Social du SILEM – Rapport final, 2009

30. Ministere de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques, Evaluation economique des investissements realises par le project SILEM dans quatre micro basins versants, Novembre 2009
31. GEF, Pilot Mission to the Government of Burkina Faso / World Bank / GEF Project SILEM, Phase I" (October 18 to 29, 2010)
32. SILEM, Bilan 5 ans du SILEM, 2010
33. CBRD I, Implementation Completion Report, February 29th 2008
34. CBRD II, Project Appraisal Document; February 2007
33. OPCS : Guidelines for Implementation Completion and Results Report, August 2006
34. SILEM Files: Map of sites of interventions, 2011.