FINAL REPORT

August 2003

Government of Burkina Faso

Environmental and Social Management Framework: *Community-Based Rural Development*

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DRAFT REPORT

Government of Burkina Faso

Environmental and Social Management Framework: *Community-Based Rural Development*

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Date: 8 May 2003

Executive Summary

This is the report of a study to produce an Environmental and Social Management Framework (ESMF) for the existing Community-Based Rural Development Project (CBRDP) and the developing Sahel Integrated Lowland Ecosystem Management (SILEM) Program, [hereafter referred to as 'the Project']. The project corresponds with the central features of the GoBF's strategy for poverty reduction which focuses on the following key issues: accelerating broad-based equitable growth; increasing access of the poor to basic social services; increasing the employment and income generating potential of the poor; and promoting good governance.[1]

The objectives of the study are:

- *To assess the potential environmental and social impacts of the CBRDP and SILEM Program, whether positive or negative, and propose mitigation measures which will effectively address these impacts;*
- *To inform the project preparation process committee charged with integrating SILEM into CBRDP of the potential impact of different alternatives, and relevant mitigation measures and strategies;*
- *To establish clear directives and methodologies for the environmental and social screening of micro-projects to be financed both by CBRDP and SILEM.*

Community Based Rural Development Project

The Government of Burkina Faso (GOBF) received financing from the IDA, effective in December 2001 to support its Community Based Rural Development Project (CBRDP), which is a community-driven development program with local investment funds managed by communities and targeted to reduce poverty and promote sustainable development in rural areas. The program aims to be implemented in Burkina Faso's 45 provinces over a period of 15 years, in three five-year phases. The program's objective is to support poverty reduction and promote sustainable development in rural Burkina Faso through strengthened local governance and community empowerment, with a focus on marginalized groups. The CBRDP aims to be implemented within a decentralized rural development framework, and shall more specifically (a) support implementation of demand-driven micro-projects, and (b) conduct local capacity-building efforts.

To achieve these goals, the program shall:

(i) *Strengthen capacity of villages and local governments to prioritise, plan, implement, and maintain community-based investments;*
(ii) *Provide decentralized funding for demand-driven and community-managed rural infrastructure and services; and*
(iii) *Support Burkina Faso's ongoing decentralization and PRSP processes.*

Phase I of the CBRDP (2001-2005) will initiate the process, develop the capacity of rural areas to manage their own development in a sustainable, equitable and productive

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(1) Terms of Reference for Environmental and Social Impact Assessment, Programme National de Gestion des Terroirs (PNGT), World Bank 2002.

manner, and facilitate the emergence of rural municipalities or groups of municipalities. To that effect, it will couple capacity building activities and a demand-driven local investment fund to enable communities to learn by doing. Phase II (2006-2010) will build upon and expand the achievements of Phase I and scale up the program to a national level. Phase III (2010-2015) will consolidate what has been achieved and prepare an exit strategy.

The baseline project (CBRDP) has the following five components:

1) *Build and reinforce local capacity building;*
2) *Provide local investment funds;*
3) *Build and reinforce institutional capacity building,*
4) *Introduce a land tenure security pilot project; and*
5) *Strengthen and provide program coordination and monitoring and evaluation functions.*

Sahel Integrated Lowland Ecosystem Management (SILEM)

The Sahel Integrated Lowland Ecosystem Management (SILEM) project, funded through the GEF financing window, is designed to provide supplemental support to the CBRDP. SILEM will provide incremental support for environmental and natural resource management related activities under each of these five components as listed above, in each of the Program's three phases.

SILEM's basic development objective is to strengthen the capacity of rural communities to undertake an integrated management of their ecosystems, so as to help reduce, mitigate and reverse to some extent the degradation of their natural resource base, and thereby alleviate, in a sustainable manner, poverty and vulnerability. In particular, SILEM will generate multiple and interconnected environmental benefits such as:

(a) *Building capacity for sound, sustainable integrated ecosystem management planning (IEM) and implementation at local, regional and national levels;*

(b) *Reduce, mitigate, and reverse land degradation and desertification with adequate and innovative soil and water management technologies in lowlands as a means for improving the productivity and sustainability of plant and animal production systems, and for protecting natural habitats of local and global importance; and*

(c) *Strengthen the natural resource base and decrease vulnerability to climate change (drought and other stress factors) by improving conservation and maintaining (agro-) biodiversity at ecosystem, species and genetic level.*

SILEM plans to intervene in its first phase (2003-2006) in only 100 villages to initiate and demonstrate IEM activities. In the second phase (2006-2010), CBRDP will intervene in an additional 2,000 villages, with an ultimate goal to cover all 8,000 of Burkina Faso's villages in the third phase, while SILEM will intervene in an additional 200 villages in the second phase, but no more than 600 villages by the end of the third phase. SILEM's goal is to initiate, consolidate, and confirm IEM demonstration activities for replication throughout the country to be initiated – and funded – by communities themselves.

Both CBRDP and SILEM are administered, and finances are channelled through, the Project Coordination Unit (PCU), which works at the national, regional, provincial, and community levels.

Major findings

The potential environmental and social impacts of CBRDP and SILEM will vary in significance according to the size and strategic influence of sub-projects. At a strategic level both CBRDP and SILEM have the potential to make a significant positive contribution to environmental and social sustainability – and specifically natural resource sustainability – though there are risks of negative impacts associated with individual sub-projects.

Ensuring that CBRDP/SILEM make significant positive contribution to environmental and social sustainability will require the integration of understanding of communities' management of their resources into the strategic direction of the project. This will be addressed under the components outlined above and the application of this ESMF.

Guidance on impacts

Examples of potential Community -driven activities, and of larger 'inter-community' activities, under the components for both CBRDP and SILEM are given in below, with indications of some of the potential negative and positive environmental and social consequences associated with each.

Table 1 ***Examples of potential environmental and social risks of CBRDP***

CBRDP activity	*Potential negative (and positive) impacts*
Feeder Road Improvement/Infrastructure	*Destruction of vegetation, habitat; water pollution; soil erosion; increased migration and social instability; health consequences. (Opportunity for positive impact: improved communication, market access, access to social services)*
Water Supply Infrastructure	*Health implications, pressure on and degradation of surrounding land, social pressures; (Opportunity for positive impact: improved water supply for variety of uses; social benefits)*
Social and Economic Infrastructure	*Health implications; waste disposal; social disparities; (Opportunity for positive impact: improved education and health services)*
Soil and Water Conservation	*Soil and groundwater pollution (Opportunity for positive impact: Improved and restoration of land use; productivity; social stability)*
Structural Support for Improving Animal Husbandry	*Livestock pressure on resources; social conflict between herders and local population (Opportunity for positive impact: improved livestock management and health)*
Structural Support for Improving Agricultural Production	*Contamination from agro-chemical use; social conflicts (Opportunity for positive impact: improved crop production; social stability)*

CBRDP activity	*Potential negative (and positive) impacts*
Structural Support for Improving Forestry	*Reliance on certain tree species with consequences; social conflicts (Opportunity for positive impact: improved forest management; energy resources, social stability)*

Table 2 ***Environmental and Social Risks of SILEM***

Project component and activities	*Environmental Risks*	*Social Risks*
1. LOCAL CAPACITY BUILDING		
Land use Planning with GIS as an input for the design of local development plans	Planning for new development or rehabilitation of lands with ensuing environmental risks	Certain vulnerable social groups effectively excluded from planning process
Information and Education on National NRM/Environment Action Plans	None	None if training directed at a level higher than village level
Sustainable NRM financing mechanisms/ Partnership Office	None	None
Initiation of decentralized NRM/IEM financial systems	None	None
2. LOCAL INVESTMENT FUND		
Innovative soil and water management/conservation techniques & infrastructure	Significant impacts possible depending on nature, extent, activities to be undertaken on sub-project.	Activities can displace certain segments of population or restrict access to resources.
Agro-biodiversity seed multiplication and research activities	Displacement of non-agricultural species	Dependence on annual multiplication and distribution of seed
Crop-livestock-fishing integration techniques and infrastructures	Pressure on land and water resources	Potential conflict among participants
Agro-sylvo-pastoral models testing and dissemination	Pressure on land resources and natural habitats	Potential conflict among participants
Bio-diversity promoting commercial enterprises.	Pressure on use of bio-diversity resources, encroachment on cultural properties such as sacred forests.	Elite capture, exclusion of disadvantaged groups.
Production and marketing of agro-minerals for soil fertility restoration.	Health and environmental risks associated with inappropriate use and handling agro-minerals.	Unequal social distribution of agro-minerals.
Production and marketing of organic manure and of soil cover crops.	Health and environmental risks associated with inappropriate use and handling of organic manure .	Unequal access to residues for making organic manure and cover crops.
Large scale NRM/Environment studies	None	None
3. INSTITUTIONAL CAPACITY BUILDING		
Creation of adequate NRM policy environment	None	None

Project component and activities	*Environmental Risks*	*Social Risks*
HR Training for Global Environment conventions and negotiations	None	None
NRM/Environmental Policy forum	None	None
4. LAND TENURE SECURITY		
Support to local land conflict resolution mechanisms.	None	Potential for involuntary resettlement issues.
5. PROGRAM COORDINATION, M&E		
Program coordination, M&E	None	None

Environmental and Social Management Framework

This report sets out the Environmental and Social Management Framework that will be used to avoid, manage or mitigate all potential environmental and social impacts associated with the sub-projects. The ESMF includes:

- *Relevant Burkina Faso and World Bank Safeguard Procedures (Chapter 3);*
- *Guidance on potential impacts (Chapter 5);*
- *Reporting systems and responsibilities of officers in implementing the ESMF (Chapter 6);*
- *Capacity-building and training requirements (Chapter 7); and*
- *Costs to be mainstreamed into project design (Chapter 8).*

The details of the ESMF will be integrated into the sub-project cycle.

Reporting systems

Elements of the ESMF include a flowchart for reporting and advice, a screening checklist for community micro-projects, a screening checklist for inter-community projects applicable to both CBRDP and SILEM, and support to local development components, annual report forms for officers, and explicit descriptions of roles, accompanied by terms of reference.

The screening checklist for community micro-projects is based on a list of basic yes/no answers, culminating in a decision on whether further advice is sought, and if so from whom. The screening checklist for inter-community projects also demands that further information is given on the reasoning for the yes/no answers, and it culminates in a decision on whether a further in-depth EIA is required.

Responsibilities

The main measures required to implement the ESMF are:

- *At the national level, a staff member will be appointed within the Project Coordination Unit (PCU) with a specific responsibility for addressing natural resources management issues;*
- *An annual environmental performance audit, to be carried out by an independent consultant;*
- *The Natural Resources Management Officer will stimulate the Provincial Technical Coordination Committee (CCTPs) and Provincial Coordination Units (PRCUs) to develop strategic approaches to environmental sustainability in their provinces;*
- *Environmental and Social Mitigation Officers will be selected from qualified PRCU staff or recruited to ensure environmental and social issues are addressed and mitigated at the community or inter-community level;*
- *Specific studies would be carried out on issues of natural resources management and cumulative assessments.*

Training and sensitisation programs

Details of the project's training and sensitisation programs on environmental and social management and mitigation are provided. Recommendations for training include sensitisation and knowledge training in the areas of environmental and social screening and natural resource management for targeted audiences (Village and Inter-village Management Committees, Contract Service Providers Provincial Coordination Units, Provincial Technical Coordination Committee, Project Coordination Unit).

Costs

Estimated costs for mainstreaming environmental and social recommendations into the project design are also provided. The overall costs under the ESMF are estimated at US$ 1,370,000 over and indicative six-year project implementation period.

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LIST OF ACRONYMS

AGEREF	Association Inter-villageoise de Gestion des Ressources Naturelles et de la Faune
APL	Adaptable Program Loan
CAP	Community Action Plan
CAS	Country Assistance Strategy
CAS	Comite d'Action Spécifique (Special Action Committee)
CBNRM	Community-Based Natural Resources Management
CBRDP	Community Based Rural Development Project (PNGT2)
CCTP	Provincial Technical Coordination Committee
CDD	Community Driven Demand
CIVGT	Inter-Village Land Management Committee
CND	National Commission on Decentralisation
CVGT	Village Land Management Committee
DGCL	Department for Local Governments
DREP	Regional Office of the Ministry of Economy and Finance
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
GEF	Global Environment Fund
GEPRENAF	Pilot Community-based Natural Resources & Wildlife Management project
GOBF	Government of Burkina Faso
ha	Hectare
IDA	International Development Association
IEM	Integrated Ecosystem Management
LIF	Local Investment Fund
MATS	Ministry of Land Management
M&E	Monitoring and Evaluation
NGO	Non-Government Organisation
NSC	National Steering Committee
PAGEN	National Natural Ecosystem Management Program
PCU	Project Coordination Unit
PGT	Local Development Plan
PNDRD	National Program for Decentralised Rural Development
PNGT	Programme National de Gestion des Terroirs
PRCU	Provincial Coordination Units
PPU	Provincial Project Units (PPU)
PRSP	Poverty Reduction Strategy Paper
PSB	Programme Sahel Burkinabe (Multidonr Local Development Program in Sahel Region)
RAF	Reforme Agraire et Foncière
RF	Resettlement Process Framework

RPF	Resettlement Policy Framework (*Policy Framework for Compensation, Resettlement and Rehabilitation of Project Affected Persons)*
SILEM	Sahel Integrated Lowland Ecosystem Management project
TA	Technical Assistance
TOD	Textes de la Décentralisation
VIF	Village Investment Fund

1 INTRODUCTION

The Government of Burkina Faso (GoBF) has requested support for the preparation and financing of an *Environmental and Social Management Framework* (ESMF) for the existing *Community-Based Rural Development Project* (CBRDP) and the developing *Sahel Integrated Lowland Ecosystem Management* (SILEM) Program, [hereafter referred to as 'the Project']. The project corresponds with the central features of the GoBF's strategy for poverty reduction which focuses on the following key issues: accelerating broad-based equitable growth; increasing access of the poor to basic social services; increasing the employment and income generating potential of the poor; and promoting good governance.(1)

This is the report of a study to produce an environmental and social management framework [hereafter referred to as the 'ESMF study'] for the proposed combined CBRDP and SILEM Program.

1.1 OBJECTIVES

The objectives of the study are:

- To assess the potential environmental and social impacts of the CBRDP and SILEM Program, whether positive or negative, and propose mitigation measures which will effectively address these impacts;
- To inform the project preparation process committee charged with integrating SILEM into CBRDP of the potential impact of different alternatives, and relevant mitigation measures and strategies;
- To establish clear directives and methodologies for the environmental and social screening of micro-projects to be financed both by CBRDP and SILEM.

The primary tasks of the study are:

- To develop an environmental and social management framework that establishes methodologies for environmental and social impact assessment within project implementation;
- Identify potential policy issues regarding the environment and propose means of resolution that could be undertaken during project implementation;
- Develop a capacity building program for stakeholders to carry out *Environmental Impact Assessments (EIAs)* for micro-projects and to design potential mitigation measures in line with the World Bank's safeguard requirements and environmental legal requirements of the GoBF.

(1) Terms of Reference for Environmental and Social Impact Assessment, Programme National de Gestion des Terroirs (PNGT), World Bank 2002.

The ESMF study included a single consultancy team mission by *Environmental Resources Management* (ERM) to Burkina Faso from 16 March -- 4 April 2003. The mission consisted of various field visits to four regions (provinces) selected by the Project. (2) The authors of this report are listed in *Annex 1*. The itinerary of the field visits for the ESMF study is given in *Annex 2*. Government organizations, stakeholders, NGOs and other persons contacted during the entire mission are given in *Annex 3*. The list of documents reviewed is given in *Annex 4*.

1.2 *ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK*

The study has been charged with the development of an *Environmental and Social Management Framework*, as opposed to an Environmental Impact Assessment, because the precise details of the micro-projects - in terms of exact location, materials required, key communities, etc. - to be financed under the CBRDP and SILEM are not yet known. This is the case for the community-driven development component or local investment fund, but it is also true for micro-projects within the support to local development and decentralization component, and the land degradation and desertification component. These components are discussed in more detail in *Chapter 2* under project description.

Therefore, an Environmental and Social Management Framework (ESMF) is required, to screen for and manage the potential environmental and social impacts of the CBRDP and SILEM, and to strategically assess and manage its overall environmental and social impact.

1.3 *LAYOUT OF THIS REPORT*

The ESMF report is organized as follows:

Chapter 1 - Introduction
Chapter 2 - Project description and background information
Chapter 3 - Safeguard screening procedures
Chapter 4 - Baseline information
Chapter 5 - Guidance on Impacts
Chapter 6 - Reporting and Responsibilities for the ESMF
Chapter 7 - Capacity Building and Training Requirements
Chapter 8 - Proposed Costs

(2) During the first phase, the Project will work in twenty-six regions or provinces, but the study team made visits to the following four provinces: Kouritenga, Houet/Tuy, Soum, and Gnagna.

2 DESCRIPTION OF THE PROJECT

2.1 BACKGROUND TO THE PROJECT

2.1.1 *National Program for Decentralized Rural Development*

The Government of Burkina Faso (GOBF) received financing from the IDA, effective in December 2001 to support its *Community Based Rural Development Project (CBRDP),* which is a community-driven development program with local investment funds managed by communities and targeted to reduce poverty and promote sustainable development in rural areas. The program aims to be implemented in Burkina Faso's 45 provinces over a period of 15 years, in three five-year phases. The program's objective is to support poverty reduction and promote sustainable development in rural Burkina Faso through strengthened local governance and community empowerment, with a focus on marginalized groups. The CBRDP aims to be implemented within a decentralized rural development framework, and shall more specifically (a) support implementation of demand-driven micro-projects, and (b) conduct local capacity-building efforts.

The CBRDP's long-term vision is one of participatory and representative local governments and institutions planning and managing their own development programs, and mobilizing the necessary resources through increased local revenues and government fiscal transfers. To achieve these goals, the program shall:

(i) Strengthen capacity of villages and local governments to prioritise, plan, implement, and maintain community-based investments;
(ii) Provide decentralized funding for demand-driven and community-managed rural infrastructure and services; and
(iii) Support Burkina Faso's ongoing decentralization and PRSP processes.

Phase I of the CBRDP (2001-2005) will initiate the process, develop the capacity of rural areas to manage their own development in a sustainable, equitable and productive manner, and facilitate the emergence of rural municipalities or groups of municipalities. To that effect, it will couple capacity building activities and a demand-driven local investment fund to enable communities to learn by doing. Phase II (2006-2010) will build upon and expand the achievements of Phase I and scale up the program to a national level. Phase III (2010-2015) will consolidate what has been achieved and prepare an exit strategy.

The baseline project (CBRDP) has the following five components:

1) Build and reinforce local capacity building;

2) Provide local investment funds;
3) Build and reinforce institutional capacity building,
4) Introduce a land tenure security pilot project; and
5) Strengthen and provide program coordination and monitoring and evaluation functions.

2.1.2 *Project target areas*

CBRDP is expected to intervene directly in 26 provinces during Phase I. These interventions will be managed by 19 provincial project coordination units. *Figure 2.1* shows both provinces where CBRDP/SILEM intends to intervene directly and indirectly. It is expected that Phase II will involve direct intervention in all provinces.

2.1.3 *Proposed project budget of CBRDP*

Table 2.1 provides indicative figures for the proposed CBRDP budget available in the Project Appraisal Document (PAD). [3] World Bank financing of US$ 66.70 million was sought.

Table 2.1 ***Proposed budget for CBRDP***

Component	Sector	Indicative Costs (US$M)	% of Total	Bank-Financing (US$M)	% of Bank Financing
1. Local Capacity Building	Rural development	11.38	9.90	5.46	8.20
2. Local Investment Fund (LIF)	Rural development	54.79	47.70	33.75	50.60
3. Institutional Capacity Building	Rural development	26.52	23.10	12.73	19.10
4. Land Tenure Security Pilot	Rural development	3.82	3.30	3.10	4.70
5. Project Coordination, Administration, M&E	Rural development	10.94	9.50	5.46	8.20
6. Physical contingencies	Rural development	0.90	0.80	0.80	1.20
7. Price contingencies	Rural development	6.50	5.70	5.40	8.10
Total Project Costs		114.85	100.0	66.70	100.0
Total Financing Required		114.85	100.0	66.70	100.0

(3) Project Appraisal Document on a Community-Based Rural Development Project for Burkina Faso, October 31, 2000.

2.2 *BACKGROUND TO AHEL INTEGRATED LOWLAND ECOSYSTEM MANAGEMENT (SILEM) PROJECT*

2.2.1 *The Sahel Integrated Lowland Ecosystem Management project*

The Sahel Integrated Lowland Ecosystem Management (SILEM) project, funded through the GEF financing window, is designed to provide supplemental support to the CBRDP. SILEM will provide incremental support for environmental and natural resource management related activities under each of these five components as listed above, in each of the Program's three phases.

SILEM's basic development objective is to strengthen the capacity of rural communities to undertake an integrated management of their ecosystems, so as to help reduce, mitigate and reverse to some extent the degradation of their natural resource base, and thereby alleviate, in a sustainable manner, poverty and vulnerability. In particular, SILEM will generate multiple and interconnected environmental benefits such as:

(a) Building capacity for sound, sustainable integrated ecosystem management planning (IEM) and implementation at local, regional and national levels;

(b) Reduce, mitigate, and reverse land degradation and desertification with adequate and innovative soil and water management technologies in lowlands as a means for improving the productivity and sustainability of plant and animal production systems, and for protecting natural habitats of local and global importance; and

(c) Strengthen the natural resource base and decrease vulnerability to climate change (drought and other stress factors) by improving conservation and maintaining (agro-) biodiversity at ecosystem, species and genetic level.

2.2.2 *Implementation*

CBRDP/SILEM's (hereafter the Project) implementation follows the course that is being adopted by the overall national community-driven development (CDD) program of Burkina Faso, called the *National Program for Decentralised Rural Development*, or PNDRD. The PNDRD aims to build capacity for and support decentralisation throughout Burkina Faso's 8,000 villages by the year 2010. The PNDRP will also support the ongoing participatory development process being carried out under Burkina Faso's Poverty Reduction Strategy and Rural Development Strategy (PRSP).[4]

(1)Source: Burkina Faso PRSP. Internet: http://www.imf.org/external/NP/prsp/2000/bfa/01/index.htm,

In the first phase (2001-2006), CBRDP plans to intervene in 26 provinces with a target of 2,000 villages. SILEM plans to intervene in its first phase (2003-2006) in only 100 villages to initiate and demonstrate IEM activities.

In the second phase (2006-2010), CBRDP will intervene in an additional 2,000 villages, with an ultimate goal to cover all 8,000 of Burkina Faso's villages in the third phase, while SILEM will intervene in an additional 200 villages in the second phase, but no more than 600 villages by the end of the third phase. SILEM's goal is to initiate, consolidate, and confirm IEM demonstration activities for replication throughout the country to be initiated - and funded - by communities themselves.

Both CBRDP and SILEM are administered, and finances are channelled through, the Project Coordination Unit (PCU), which works at the national, regional, provincial, and community levels. *Table* 2.2 illustrates the CBRDP's roles and responsibilities at the national, regional, provincial, and village levels.

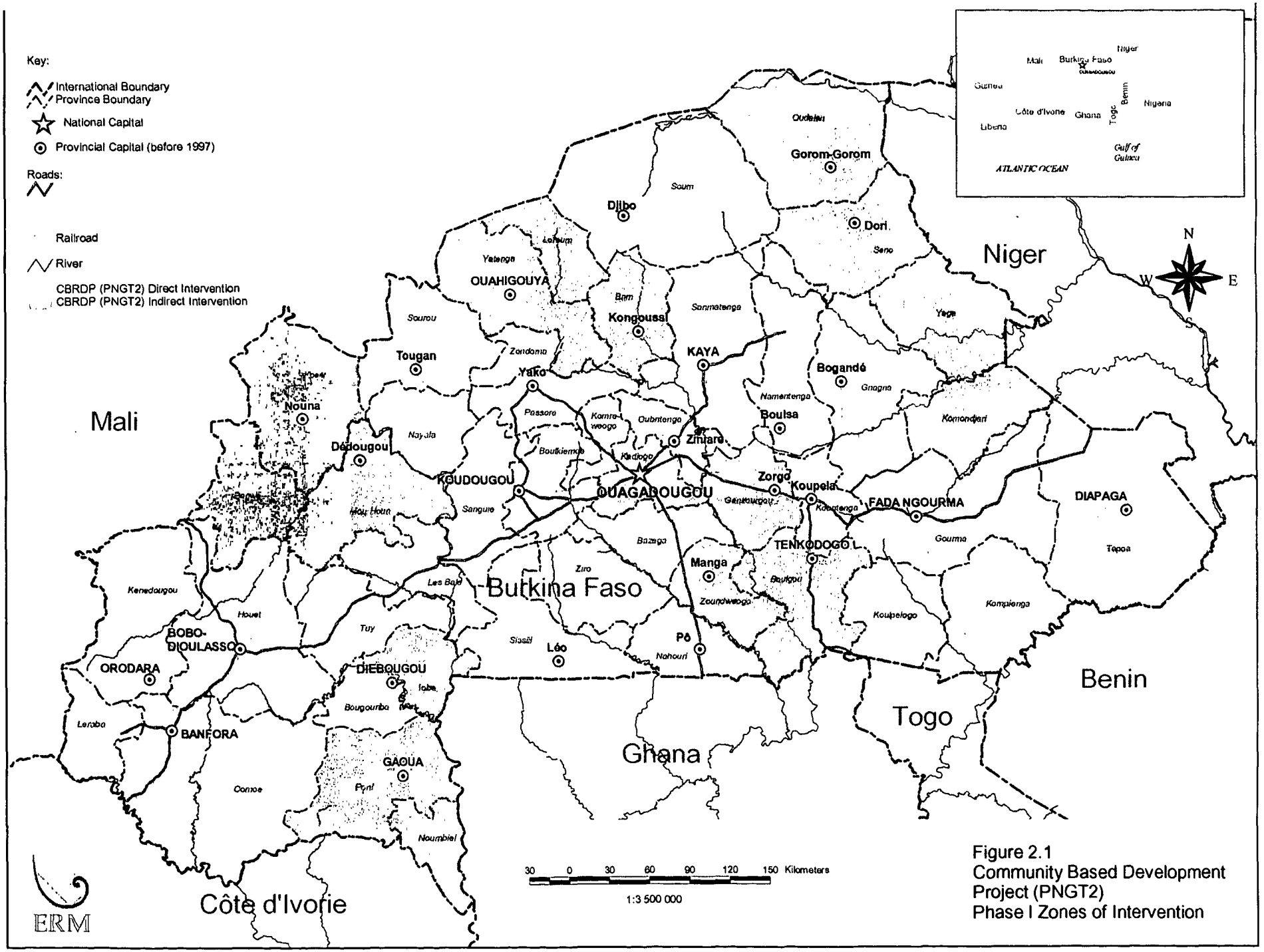


Figure 2.1
Community Based Development Project (PNGT2)
Phase I Zones of Intervention

Table 2.2 ***CBRDP Administration***

Unit	Responsibility
National Level	
CNCPDR	• Assures harmonisation of the different steps taken through decentralisation
Steering Committee	• Comprised of representatives of relevant Ministries and civil society, approves and supervises programs of activities
Project Coordination Unit	• Provides daily program management
Regional Level	
Regional Office for Accountability	• Five committees are in place to collaborate with the CCTPs to channel funding for CVGT/CIVGT development plans (PGTs)
Provincial Level	
Provincial Technical Coordination Committee (CCTP)	• Provides Provincial coordination to the CBRDP through direct intervention with villages • Provides indirect intervention in areas that are impacted by CBRDP activities • Ensures control over projects to ensure that benefits accrue at the provincial level • Provides quality assurance over which projects get funded through CVGT/CIVGTs • Ensures quality assurance at a provincial level to avoid duplication of efforts
Provincial Project Coordination Units (PRCU) [5]	• Support the CCTP in provincial coordination with the CBRDP and intervention with villages • Provide technical support to villages in community driven development • Assist in the identification and screening of micro-projects under the CBRDP • Responsible for reviewing micro-project applications for technical and financial feasibility
Local Level	
Village/Inter-Village Land Management Committee (CVGT/CIVGT)	• Community-based organizations that devise community development plans and receive funding through the CBRDP for micro-projects. • Responsible for sub-project execution.

(2) Also referred to provincial operational units (Equipes Opérationnelles, EO) in the CBRDP PAD.

2.2.3 *Proposed budget*

A project costing is currently under preparation, but will be revised during project appraisal. *Table* 2.3 provides indicative figures available in the PAD. The indicative costs as well as Bank financing in the table are based on the available associate funding for 2000 villages. The SILEM project costs for 100 village sites amount to US 25.37 million and include US$ 10.80 million World Bank funds; US$ 7.52 million other international; US$2.20 million local communities involved in the Project (total co-financing SILEM of US$ 20.52 million). (6)

Table 2.2 ***Proposed budget for SILEM project***

Component	Indicative Costs (US$M)	% of Total	Bank financing (US$M)	% of Bank financing	GEF financing (US$M)	% of GEF financing
1. Local Capacity building	12.88	10.70	5.46	8.20	1.20	26.70
2. Local Investment Fund (LIF)	57.79	48.20	33.75	50.60	1.80	40.0
3. Institutional Capacity Bldg	26.52	22.10	12.73	19.10	0.80	17.80
4. Land Tenure Security Pilot	3.82	3.20	3.10	4.60	0.20	4.40
5. Project Coordination, Administration, M&E	11.44	9.50	5.46	8.20	0.30	6.70
6. Physical contingencies	0.90	0.80	0.80	1.20	0.00	0.00
7. Price contingencies	6.50	5.40	5.40	8.10	0.20	4.40
Total Project Costs	119.85	100.0	66.70	100.0	4.50	100.0
Total Financing Required	119.85	100.0	66.70	100.0	4.50	100.0

(6) Sahel Integrated Lowland Ecosystem Management (SILEM) Project Appraisal Document, 8 July, 2002.

3 SAFEGUARD SCREENING PROCEDURES

The proposed *Environmental and Social Management Framework* has been designed to fully comply with national environmental codes and legislations in Burkina Faso and with the World Bank's environmental and social safeguard policies.

This chapter sets out the key safeguard policies that provide the policy context to the ESMF including World Bank policies and Burkina Faso's legal requirements on environmental assessment. More details of the policy context are provided in *Annex 5*.

3.1 WORLD BANK SAFEGUARD POLICIES

As discussed in the previous chapter, the CBRDP will be supported by the GEF financed SILEM which aims to provide support for environmental and natural resource management related activities.

As part of the ESMF process, proposed micro-activities under the combined CBRDP/SILEM will be designed at the local level to ensure that they are screened for potential impacts and that they comply with the requirements set out under World Bank safeguard policies.

The CBRDP/SILEM is anticipated to have mostly beneficial impacts on the environment, as its main objectives is to promote sustainable land use and ecologically sound natural resources management through community driven development. However, due to the nature of the potential micro-projects to be financed under the Local Investment Fund, which involves small-scale infrastructure, the proposed project has been rated Category B under the World Bank's policy on environmental assessment (OP 4.01), requiring a partial environmental assessment (EA). The EA is required to assess the potential impacts associated with micro-projects. In addition to the OP 4.01, the CBRDP/SILEM has also triggered a number of other safeguard policies as indicated in *Table 3.1*.

Table 3.1 *Safeguard Policies*

Policy	*Applicability*
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	Yes
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	Yes
Forestry (OP4.36, GP 4.36)	No
Pest Management (OP 4.09)	No
Cultural Property (OPN 11.03)	No
Indigenous Peoples (OD 4.20)	No
Involuntary Resettlement (OP4.12, BP 4.12)	Yes
Safety of Dames (OP 4.37, BP 4.37)	No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)	No

This can be explained as follows:

OP 4.01 (Environmental Assessment)
The OP 4.01 has been triggered because there is the potential that implementation of the CBRDP/SILEM may lead to negative environmental impacts. The EA study, however, has determined that there are no potential large-scale, significant or irreversible environmental impacts associated with the project. The potential impacts identified are mainly localized impacts associated with activities to be financed under the local investment funds (i.e. rural roads, feeder roads through forest zones, tracks and pathways in pastoral zones, small scale dams, piped water systems, wetlands and ecosystem management, and rangeland management), which can be effectively mitigated and are addressed in the ESMF and using the screening and review procedures in *Chapter 6*. The ESMF identifies the major potential environmental issues that could arise as a result of project interventions and proposes measures to be taken to mitigate these effects, including proposed training and monitoring measures.

OP 4.04 (Natural Habitats)
The OP 4.04 has been triggered due to the potential nature of CBDRP/SILEM activities to border or operate in natural habitats or protected areas. Moreover, the SILEM program aims to finance investments in the conservation of natural habitats and biodiversity. Natural habitats have to be carefully protected since Burkina Faso has a rich biodiversity and a number of protected areas designated by law. The project areas under the project encompass a number of natural habitats and/or may border or operate in these areas. Thus, the ESMF will identify any potential impacts that activities to be financed under the project may have on natural habitats, reserves or protected areas in Burkina Faso using the screening tools proposed in *Chapter 6*.

OP 4.12 (Involuntary Resettlement)

The Project will support community investments in various types of micro-projects, of which many, particularly those involving small-scale infrastructure, will require land for construction. To mitigate against the potential for involuntary resettlement, a Resettlement Policy Framework (RPF) has been prepared which provides the framework for resettlement planning under the CBRDP. In addition, a Process Framework has been prepared specifically under the SILEM project, to address the potential impacts related to resettlement and migration associated with sensitive and natural habitats and protected areas. The screening tools provided in *Chapter 6* have been designed to address issues of resettlement and land acquisition in parallel with the screening criteria developed under the RPF.

3.1.1 *Mainstreaming safeguard compliance into sub-project screening*

The screening criteria provided in the ESMF includes relevant questions on natural habitats/protected areas, involuntary resettlement and land acquisition, introduction of pesticides, impacts to forestry resources, impacts to cultural property and inclusion of indigenous people in the project identification process. This will ensure that all concerns related to the Bank's safeguard policies are taken into account during the screening of micro-projects for potential impacts, and that the appropriate mitigation measures can be adopted to address them.

3.2 *BURKINA FASO'S LEGISLATION FOR ENVIRONMENTAL ASSESSMENT*

The preparation of this ESMF has also taken into account the requirements for environmental assessment under Burkina Faso's law, mainly under the *Code de l'Environnement, or Code of Environment Law.* The GoBF passed this law in 1994 following the identification of the need to improve environmental assessment in Burkina Faso's National Environmental Action Plan. The Code has appointed the *Ministry of Environment and Sustainable Livelihoods* (formerly called the Ministry of Environment and Water) as the institution responsible for environmental management, pollution control, and protection and conservation of natural resources.

In parallel with the Code, a *Decret N° 2001-342* for EIA legislation was passed in 2001 by the Council of Ministers. The legislation outlines the application procedures, categories of environmental classification for various types of projects and program, and the requirements for approval and review of EIAs. *Annex 5* provides detailed information on the environmental regulations and administrative framework in Burkina Faso.

3.2.1 *Sub-project screening under Burkina Faso law*

With these requirements in mind, for those sub-projects which require an EIA, as determined under the screening and review process (*Chapter 6*), a copy of the EIA report will be submitted to the *Ministry of Environment and Sustainable Livelihoods (MESL)* for approval. The MESL will have 2 weeks to review and comment on the EA before the sub-project can be appraised. This will ensure that sub-projects that may have potentially significant impacts and require more detailed study receive national level approval as well as district level approval.

3.2.2 *MESL approval of this ESMF*

The authors of this ESMF study propose that as long as the ministry has the opportunity to approve the ESMF, they should not require EIAs of all sub-projects or micro-projects.

4 BASELINE INFORMATION

This chapter provides with key baseline socio-economic information on the CBRDP/SILEM's project sites. Detailed assessment of baseline features of Burkina Faso relevant to the CBRDP/ SILEM is provided in *Baseline Annex 6*.

4.1 IDENTIFICATION OF PROJECT SITES

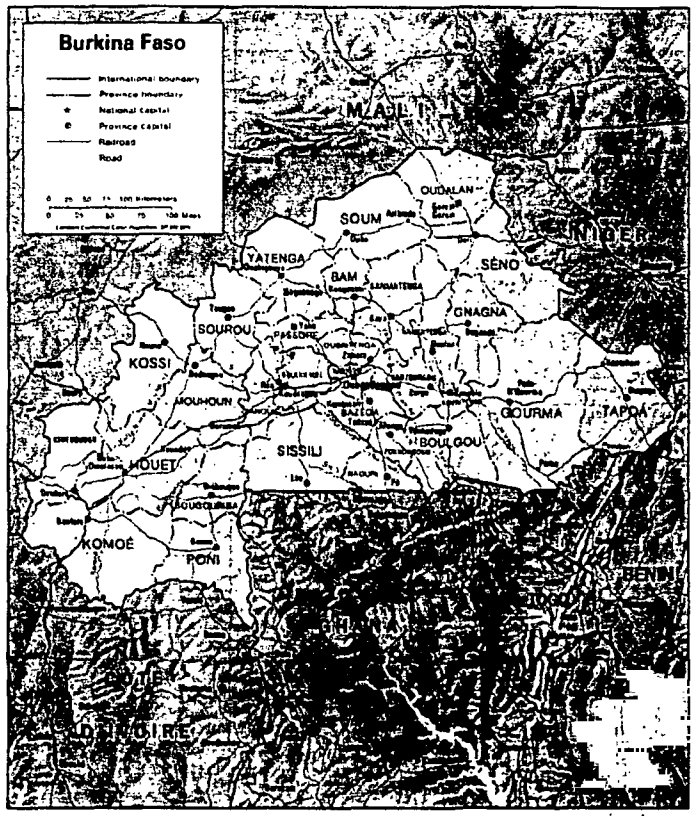
For the first phase (2002-2005), CBRDP will cover 2,000 villages in 26 provinces throughout the country. SILEM program will support rehabilitation of degraded lowland ecosystems for Burkina Faso's northern provinces of Soum, Oudalan, Seno, Yatenga, Loroum and Bam (100 villages) located in the northern Sahelian zone, covering 36, 829 sq km (13.4% of the country), and 662,129 inhabitants.

For the second, third and fourth phases (2006-2015), CBRDP aims to extend to all 45 provinces of Burkina Faso, whereas SILEMs intends to cover 600 lowland villages and related micro-basin and watershed rural communities. SILEM's main project implementation areas are the following:

- Northern Sahel sylvo-pastoral and wildlife reserve;
- The protected natural habitats on the central Mossi plateau; and
- The protected natural habitats in the Eastern, Southern and Western provinces.

4.2 BURKINA FASO: BACKGROUND

Figure 4.1 Map of Burkina Faso



- Burkina Faso is situated in West Africa and bordered to the North and West by Mali, to the East by Niger, to the Southeast by Benin and to the south by Togo, Ghana and Côte d'Ivoire and has a total area of 274,200 sq. km. (106,000 sq. mi.).
- There is an estimated population of 11.6 million people, with a growth rate of 3.2 per annum. (7)
- GDP per capita is US $214 in 2001.

(7) 2000 Poverty Reduction Strategy Paper

- 45.3% of the population falls below the national poverty line (30 cents per day per capita), and 85% of the population lives below the internationally recognised income poverty line (two dollars per day). [8]
- Life expectancy at birth is 44 years, and the illiteracy rate is at 75%. [9]

4.3 PHYSICAL ENVIRONMENT

4.3.1 *Agro-climactic Zones*

Burkina Faso can be divided into three major agro-ecological zones (refer to *Baseline Annex 6*):

- In the North is the Sahelian zone, with 350-500 mm rainfall per year. The Sahelian zone is characterized by sand dunes interspersed with areas of tiger bush and hardpan, and hills and low lying rocky ridges. There is a predominance of steppe vegetation such as *Acacia Senegal, Acacia nilotica, Balanites aegyptica, Aristida spp, Cenchrus spp.* The baobab (*Adanosonia digitata)* is one of the most commonly found tall trees in the area.
- In the Centre is the Sudano-Sahelian zone (the central plateau, central-north, central-east, and east), with 700-800 mm rainfall per year, with high variability across small distances. The Sudano-Sahelian region is characterised by savannah. The most common species of tall trees are *Burtyrospermum parkii, Khaya senegalensis, Parkia biglobosa, Tamarindus Cymbopogon* and *Loudetia.* The most commonly found grasses are *Andropogon gayanus, Cymbopogon* and *Loudetia.*
- In the West and South is the Sudanian zone, with 800-1,000 mm rainfall per year. However, the Sahara desert is relentlessly moving south, and drying the wooded savannah and its thin layer of cultivatable soil into sun-blackened rock-hard *lakenite.* Here, the herbaceous layer is more dense and forms a continuous covering.

4.3.2 *Rivers and Plains*

Three principal rivers run through the country: the Komoé (Comoé) River is in the Southwest, which flows through Côte d' Ivoire to the Gulf of Guinea; in the Centre are the Mouhon (Black Volta), Nazinon (Red Volta), and Nakambe (White Volta) rivers, which join in Ghana to form the Volta; and in the Northeast are several small tributaries of the Niger. High plains of about 1000 to 1300 feet comprise the major part of the territory. The highest, Mount Tenakourou in the

(8) World Bank, 2002, Burkina Faso: Improving Service Delivery at the Local Level
(9) World Bank, 2003, African Development Indicators

west near the border with Mali, measures 2500 feet, followed by the peak of Nahouri in the South.

4.3.3 *Climate*

The tropical weather in Burkina Faso is divided into two seasons: the dry season from November to May (with a cool and dry period from November to February, and hot weather from March to May), and the rainy season from June to October. The average temperature is 60°F (15°C) at night, and 85°F (30°C) during the day, except in the dry season when temperatures may rise to over 100°F (38°C). Annual rainfall is highly variable over space and time, and ranges from 40 inches to 10 inches.

4.4 *SOCIO-ECONOMIC ENVIRONMENT*

4.4.1 *Population and land use*

Burkina Faso's population is estimated at 11.6 million people, with a growth rate of 3.2 per annum. About 55% of the entire population lives in rural areas and the population distribution in Burkina Faso is uneven. The following is the breakdown of population concentration according to three zones:

- The Sahelian Zone in the North is a traditional herding area, with a low population density (10-12 person per sq. km). The Sahelian people are increasingly moving to the west, south and east, due to increasing desertification in the region. In the Sahelian Zone, the Fulani system combines traditional herding with mixed farming. Here, some households live like the Bwa-Dagari, and others like the Mossi.
- The Sudano-Sahelian Zone in the Centre and East is the most densely populated area (of around 40-50 person per sq.km). The Kadiogo Province, in which the capital city Ouagadougou is located, has 156 inhabitants per sq mile, and has the largest population. Ouagadougou, the capital city, counts some one million inhabitants. The second largest province is Kouritenga province in the East, with 47.6 inhabitants per sq mile. The Mossi system is prevalent in this zone, where households occupy separate plots scattered across the territory. Under this system, individuals within a household may cultivate different plots.

- In the West, in the Sudanian Zone, the Bwa-Dagari system exists, in which households are grouped together and form a village concession consisting mainly of village fields and bush. It is sparsely populated and attracts people from the other two areas seeking better farming and living conditions. This is a cotton-growing region of Burkina Faso, with the most fertile soil in the country.

4.4.2 *National Economy*

GDP per capita was US $214 in 2001, and according to the Human Development Index, Burkina Faso is among the ten least developed countries in the world (169 out of 175 countries). However, the country's economic performance has been steadily improving in the past 10 years, with an average GDP growth rate of 5.6%.

Agriculture and livestock account for 32% of GDP, 92% percent of labour force and 60% of exports. Industry accounts for 27.8% of GDP and 3% of labour force and is largely based on agriculture. Service contributes to 40.2% of GDP and 5% of labour force. The following are the main economic indicators:

- About 87% of the population of Burkina Faso are engaged in subsistence agriculture and nomadic stock-keeping. There are about 1,300,00 farms, generally marked by low productivity;
- A significant proportion of the male labour force migrates annually to the neighbouring countries, particularly to Ghana and C'ote d'Ivoire, for seasonal employment. Most workers are employed in the agriculture sector. Main agricultural activities include growing peanuts, shea nuts, cotton, millet, corn rice, sesame sorghum and tending livestock;
- The main industries in Burkina Faso are cotton, lint, beverages, agricultural processing, soap, cigarettes, textiles and gold;
- Burkina Faso exports cotton, animal products and gold. The country imports machinery, food products and petroleum.; and
- 220 million kWh (1996) of energy is produced in Burkina Faso using fossil fuels and hydro-electric power. However, the greatest fuel source (96%) comes from burning wood.

4.4.3 *Socio-welfare indicators*

According to *Poverty Analysis in Burkina Faso*, 1999 [10], the proportion of the population living below the poverty line is 45.3% [11]. The poverty is a rural phenomenon, accounting for 94% of the national figure in 1998. There is a high

(10) Based on 1998 Living Standards Survey with participation of 8,500 households.

(11) Poverty line is expressed in terms of caloric intake at 2300/person/day, and CFAF 72,690 per adult per year.

percentage of inequity in Burkina Faso: 10% of the total population continue to account for 70% of aggregate national income, suggesting that there is not trickle down effect of transferring wealth to the poor.

The poorest regions are the North, the North-Centre, the Northwest, the East-Centre, the North-Centre, and the East. (Refer to *Table 1.1* in *Baseline Annex 6*).

The incidence of poverty is highest among food crop farmers (50-52%), followed by cash crop farmers (42.4%), and unemployed persons (38.7%). The average household size among the poor is 7.6 persons. Analysis of the poverty trend by socio-economic groups is provided in *Table 1.2,Baseline Annex 6.*

4.4.4 *Education*

One of CBRDP's major goals is to increase literacy through alphabetisation program under its *Local Capacity Building* component. Literacy is a first prerequisite for successful capacity building and local development. Burkina Faso has one of the lowest literacy rates in the world at 18.5% (1998).

Rural women have the lowest literacy rate at 6.8%. Rural literacy rate is poor overall at 10.8%. Establishment of mobile schools and teaching centres seem to be effective mechanisms for combating illiteracy in rural areas. *Table 1.3* in *Baseline Annex* 6 provides education indicators for 1998.

4.4.5 *Health*

CBRDP identified HIV/AIDS as the major health problem in the country, and aims to address HIV/AIDS problems through its Local Capacity Building and Local Investment Funds (LIF) components by conducting HIV/AIDS training and awareness increasing programs. The training will consist of providing information on prevention, care and the identification of specific interventions related to alleviation and prevention of the disease through local development plans. (12)

Burkina Faso's population is growing at a rapid rate of 3.2% per annum, due to the high fertility rate (6.8 births per woman). The health indicators are among the poorest in Sub-Saharan Africa: life expectancy at birth is 54 years (as compared to average of 52 for Africa), child mortality (13) is 219 (compared to 151), HIV

(12) Since the financial envelope is at US$ 3-5 per head for LIF, serious HIV/AIDS alleviaition and treatment can not be achieved through CBRDP.

(13) deaths before age of 5 per 1,000 births

prevalence is 7% (African average at 8%), child malnutrition is at 32% (African average at 24%), and maternal mortality is 484 per 100,000 live births.

Burkina Faso has the second highest HIV incidence among Western African countries. Refer to *Table 1.4.* and *Table 1.5* in *Baseline Annex* 6. HIV, malaria, tuberculosis, cholera, hepatitis A, meningitis, typhoid fever, yellow fever, schistosomiasis and dengue are major diseases that contribute to mortality in Burkina Faso.

4.4.6 *Migration*

Many Burkinabé are migrating within country from one region to another, or from rural to urban areas. Also, there has been migration to other countries such as Côte d'Ivoire and Ghana. However, in the last two years the trend has reversed, and due to recent instability in Western Africa, migrants have been returning to Burkina Faso. Burkina Faso has a very high percentage of migrant child labour, either to urban areas or to other countries. An estimated 9.5% (333,000) of children 9-17 years live outside their homes, of which 29% (73,000) lived abroad, mostly in Côte d'Ivoire. Box 1.1 *in Baseline Annex 6* outlines the trends of migration in the country.

4.4.7 *Administration in Burkina Faso*

Burkina Faso is governed under the Constitution of 1991. The president whom is elected by popular vote for up to seven years heads the executive branch. The bicameral legislature consists of a 111-member elected national assembly and a 120-member appointed chamber of representatives. The country is divided into 45 provinces. (For more information, please refer to *Table 1.6.* in *Baseline Annex* 6).

4.4.8 *Ethnic Groups and Religions*

Of the 60 ethnic groups that populate the country, the Mossi (48.6%), Bissa, Gourounsi and Gourmantché live in the central territories of the Sudano-Sahelian zone; the Fulani (7.8%) in the northern and northeastern territories of the Sahelian zone; the Dioula in the west, in the Sudanian zone. Though traditional religions are practiced by 25.9% of the population, two other religious faiths are represented in Burkina Faso: Islam represents 52% and Christianity 17.6%. Refer to *Table 1.7.* in *Baseline Annex*6.

4.5 ACCESS TO ASSETS

4.5.1 *Access to Land*

Burkina Faso's land tenure system is largely governed by traditional systems, in which the local chiefs make decisions regarding plot distribution among village residents and incoming migrants. In Burkina Faso, women do not have right to own land, but have the right to plant seeds of their choice on plots allocated to them by husbands, or males in the family. Their rights to cultivate plots increases with their status, and usually, the elder women (or the first wives) have much more weight in the decision-making process regarding plot tending. Allocation of separate plots to women helps households to diversify their risks, and to ensure provision of subsistence crops .

4.5.2 *Access to Productive Capital, Employment and Financial Services*

Rural people have the lowest access to capital and financial services. The economy of the poor remains largely non-liquid due to the absence of banks geared to their needs and the scant presence of micro-credit organizations.

4.5.3 *Access to Potable Water*

In 1998, 90% of households obtained their drinking water from wells, borehole and public taps. There is a trend to an improvement in the quality of drinking water, due to the national water supply policy. However, waterborne diseases are prevalent in rural areas and contribute to the high mortality and morbidity rates.

4.5.4 *Access to Electricity*

In rural Burkina Faso, less than one percent of households have access to electricity. In the cities, 63% of households use kerosene lamps, and 37% has access to electricity. Approximately 96% of household fuel comes from burning wood.

4.6 LINKAGES BETWEEN LIVELIHOODS AND THE ENVIRONMENT

There are several key linkages between livelihoods and environmental resources, which are relevant to rural areas in Burkina Faso. These are outlined below.

4.6.1 *Exploitation of local vegetation*

Wood harvesting

Wood is used for two main purposes: as a source of energy and as a building material. Wood represented 96% of the domestic energy consumed in 1993 The annual loss of wooded surfaces in Burkina Faso between 1980 and 1990 was, according to the World Bank, 80.000 to 100.000 ha.

Bush fires

Fire is used for the following in Burkina Faso: (i) clearing the fields; (ii) hunting; (iii) improving visibility; (iv) accelerating the re-growth of perennial grasses; and (v) customary rituals. Fire impoverishes the soil and reduces its productivity, due to causing the loss of certain nutrients (nitrogen, sulphur), and organic matter. More than 75% of fires occur between October and December. (14)

Unsustainable herding practices

Pastoralism in Burkina Faso is based on the intensive exploitation of natural resources (grazing lands) without the use of agricultural and industrial by-products. Herders cut brunches from the trees and bushes to feed their animals during the dry seasons. Unsustainable practices of pastoralism contribute to severe degradation of grazing land in the Centre, East and North. Also, herders who settle on the edge of natural reserves (in the North) pose a great threat to the forests and the preservation of their biodiversity. (15)

Unsustainable farming practices

Unsustainable farming in Burkina Faso contributes to soil degradation and devegetation. In the cotton-producing regions of the west, overuse of fertilizers and pesticides increasingly contribute to the loss of native vegetation. Also, introduction of foreign species through farming contributes to the loss of biodiversity.

4.6.2 *Soil Erosion*

Soil erosion due to water erosion can reach an average of 10 ha/year in the Sahelian region. The short, heavy rains and the subsequent runoff are major causes of soil erosion. As a result, the soil become sandy, and its water retention capacity in decreased due to the loss of organic matter.

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(14) Soil and Water Conservation in Burkina Faso, ODI, 1998
(15) Ibid, p.13

In the Sudanian-Sahelian region, soil is liable to crust formation, which produces run-offs during heavy rainstorms. Run-off water washes away nutrients from the soil.

In Sudanian area, the Sahara desert is expanding into the region, and drying the wooded savannah and its thin layer of cultivatable soil into sun-blackened rock-hard *lakenite*.

4.6.3 *Drought and Desertification*

Drought is one of major causes of desertification. Since the 1960-70s, there has been a persistent decline in average rainfall from 450 mm to 300 mm in the North, and from 1,100 mm to 860 mm in the South.

There is growing evidence that changes in surface albedo and reduced evapotranspiration (associated with devegetation) are instrumental in reducing precipitation in areas. Devegetation has also resulted in reduced ground-water recharge, increased soil-erosion and reduced soil fertility.

In the Sudano-Sahelian zone, there are 'cemeteries' of dead woodlands, with the Sahelian species such as *Acacia Senegal* and *Pterocarpu lucen* colonizing the region. Due to droughts, farmers have increasingly begun cultivating marginal areas and muddy soils susceptible to erosion.

4.7 *BIODIVERSITY IN BURKINA FASO*

Detailed information on all protected natural habitats and wildlife reserves that are relevante to SILEM and CBRDP is provided in *Baseline Annex 6*.

Table 4.7.1 ***National Parks in Project Sites***

Name	Description
Forêt Classée de la Mare aux Hippopotames	The reserve lies in Bobo-Dioulasso District in the West of the country, 80km North of the town of Bobo-Dioulasso (the second largest town in the country). It is situated between the Black Volta River and the Bossora/Bala highway.
Les forêts classées des Deux Balés	The reserve is located in central western section of the country, in Black Volta Province just west of the Black Volta River. The physical feature entails an undulating granitic plain, broken up in places by rock outcrops and lateritic plateaux.

Name	Description
Parc national de Pô	This national park is situated in the central part of the country in Ougadougou Province. Physical features consist of flood plains of alluvial clays or alluvial sands and mud, which extend along both banks of the Volta Rouge River are the dominant feature of the park. During the dry season the river is reduced to isolated waterholes.
Parc national de "W"	It is located in Fada n'Gourma province in the extreme eastern corner of the country on the international borders with Benin and Niger. The park comprises a peneplain in the upper Niger basin. It includes a stretch of the Mékrou River, which forms the international border with Benin.

Table 4.7.2 Wildlife Reserves of Interest for the Project

Name	Description
Wildlife Reserve of Arly	The reserve is situated to the east of Pama in Fada n'Gourma Province, in the south-east of the country on the international border with Benin. The area is flat lowland bordered on the south-east by the Pendjari River. Some permanent ponds persist during the dry season. It mainly consists of undifferentiated Sudanian woodland predominates.
Wildlife Reserve of Kourtiago	This reserve is located in Fada n'Gourma Province in eastern Burkina Faso, and covers 51,000ha of land. It is adjacent to W National Park complex.
Wildlife reserve of Pama	The total area is 223,500 ha. It is contiguous to Singou Total Faunal Reserve (192,800 ha) and Arly Faunal Reserve.
Wildlife reserve of Sahel	The reserve is located in Western Sahel, in the sub-préfecture of Dori. It lies in a sandy zone, with both ancient and more recent dunes in the northern part.
Wildlife reserve of Bontioli	The reserve is located in the West African Woodland/savannah, in Gaoua Province in south west Burkina Faso. The total area of the reserve is 12,700ha.

5 GUIDANCE ON POTENTIAL IMPACTS

This chapter presents guidance on the environmental and social impacts of CBRDP/SILEM, and potential impacts of the proposed SILEM program. It is designed to provide a set of procedures for those program officers charged with the implementation of the ESMF as set out in *Chapter 6.*

We discuss both the *positive* impacts and the *negative* impacts of both programs. We begin with conclusions on the overall impacts of both the Project (CBRDP and SILEM) and SILEM on its own. Specific impacts are described in more detail for community micro-projects to be funded by the Project and activities to be supported by SILEM.

5.1 OVERALL ENVIRONMENTAL AND SOCIAL IMPACT

Environmental and social sustainability are fundamental to sustainable rural development strategies, natural resource conservation, and poverty alleviation. Lessons from past experiences in Africa and elsewhere demonstrate that community involvement in the decision-making and management process may bring effective and lasting improvement in the livelihoods of people, and can lead to better use and protection of the natural resource base. Therefore environmental and social sustainability are fundamental to the success of both CBRDPand SILEM. However, there is a precarious balance between two very different scenarios:

- On the one hand, under a scenario of a successful CBRDP and SILEM which works in accordance with the vision and approach set out in project documents, both the CBRDP and SILEM would make a significant positive contribution to environmental and social sustainability in rural areas by providing the tools and training to support community driven development in the case of CBRDP/SILEM, and to make significant contributions to the restoration and protection of the local and global environment in the case of SILEM;

- On the other hand, under a scenario of a failing CBRDP/SILEM, activities supported and funded would contribute to marked further decline in environmental and social sustainability in these same areas, by not providing adequate support and guidance for community development, and perhaps to acerbate or accelerate degradation of the local and global environment.

Preliminary discussions with various stakeholders indicate that they are fully appreciative of this observation. Indeed, the institutional, social, environmental and other analyses carried out for CBRDP/SILEM or are currently being carried out during project preparation for the SILEM program will lay the foundation for the first, successful, scenario.

This conclusion emphasizes the importance of the *Environmental and Social Management Framework*, set out in *Chapter 6*, to ensure that environmental and social sustainability is fully mainstreamed into CBRDP/SILEM design, appraisal, and implementation.

5.2 *POTENTIAL POSITIVE IMPACTS*

The overall positive environmental and social impacts predicted under the first scenario is based on the following reasoning for CBRDP/SILEM:

- The CBRDP/SILEM will strengthen traditional systems of environmental and social governance and embrace the notion of community dialogue through effective functioning of Village or Inter-Village Committees for Community Land Management (CVGT/CIVGT);
- CBRDP/SILEM will help promote the decentralization process in rural provinces through its capacity building component (CVGT/CIVGT, CNCPDR);
- Various Project support activities to increase literacy and reduce poverty will help communities to become better informed on impacts of degradation of natural resources and encourage conservation;
- Strategically placed infrastructure development and associated services may enable more sustainable production systems (e.g. agriculture, forestry, etc.);
- Maintenance and rehabilitation of rural roads will increase access to markets and social services, such as health care and education;
- An increased number of strategically located small-scale water points will help meet the need for potable water and lead to a more diffuse distribution of human and livestock pressures on existing limited resources;
- Effective management and reversal of degradation of natural habitats through a variety of known soil and water conservation techniques (e.g. rock bunds, composting, windbreaks, reforestation, etc.) will lead to a positive impact on conservation of natural habitats and biodiversity in most areas;
- Local institutional strengthening and empowerment is achieved through improved understanding and use of the tools and mechanisms for environmental and social impact assessment and participatory approaches to community development (e.g. development of a community development plan); and,

- Investment in social and economic infrastructure, such as construction or rehabilitation of school classrooms, health clinics, markets, etc. will result in improvement in people's well-being and livelihoods, and promote equitable rural development.

Therefore CBRDP/SILEM has the potential to make a significant contribution to GoBF's policies to protect and preserve the environment while reducing poverty in rural areas.

For the proposed SILEM program presently under preparation, the overall environmental and social impacts are more difficult to predict at this time. This program is designed to be multi-focal, covering land degradation, biodiversity conservation, climate change and international waters. Within this context, it should be noted that many of these expected impacts would be very challenging to monitor and evaluate. However, it is expected that there will a number of positive impacts. These are illustrated in *Box 5.1*.

The rationale for providing supplemental funding to the CBRDP/SILEM is that communities are more likely to express demands for social and income-generating activities rather than for local and global and environment protection activities. The SILEM investment window is intended to provide resources for select communities to engage in environment protection activities and thereby provide them with a greater incentive for them to express such demands for local and global environment related activities.

SILEM will be "fully blended" into CBRDP/SILEM to support its five components: (1) local capacity building, (2) local investment fund, (3) institutional capacity building, (4) land tenure security, and (5) program coordination. However, the disadvantage is that these opportunities and funds will not be available to all CBRDP/SILEM participants and will be targeted primarily to villages located in or around lowlands, micro-basins and watersheds and protected habitats of Northern Sahel and Mossi plateau, as well as in the Eastern, Southern and Western provinces of the country.

Box 5.1 ***Potential Positive Impacts of the CBRDP/SILEM***

- Reduction in land degradation and desertification mitigation benefits expected to arise from improvement in soil and water management/conservation practices and infrastructure;
- Promotion of benefits from an increased agro-biodiversity (biological diversification of crops and livestock varieties/ecotypes) with increased adoption and cultivation of certain crop varieties in lowlands after introduction and implementation of improved lowland soil and water management infrastructure and practices;
- Increased lowland soil micro-biological activity and micro-biodiversity through improved soil-water management, improved drainage, soil de-compaction, and improved management of organic manures to fertilize the soil;
- Promotion of small-scale aquaculture techniques in lowlands, combinations of cropping and fishing/aquaculture activities to enhance flooded surfaces in lowlands where biodiversity is significant;
- Removal of threats and barriers to integrated ecosystem management and in particular to conservation and sustainable use of biological diversity in natural habitats such as lowland gallery forests, sacred forests, and reserves of medicinal plants, of various types of woods, birds, small animals, microorganisms and grass vegetation;
- Carbon sequestration benefits from above and below the ground through increased storage capacity in gallery and sacred forests, crop intensification and resulting biomass, and an increase in organic matter content of soils;
- Protection of international waters (e.g. Volta and Comoé rivers) and their tributaries through restoration of degraded river banks (from erosion and field encroachment) which is expected to significantly reduce the pollution of international waters of soil sedimentation and agro-chemicals;
- Contribution to the decentralization process through community management of natural resources and Integrated Environmental Management (IEM) decision-making processes;
- Provision of GIS tools to local communities and local governments for IEM land use planning and the related training of individuals and institutions in their use;
- Formation of partnerships with international, public and private development communities to acquire sustainable IEM financing capacity through various financial schemes; and
- Improved land tenure security and access to agricultural inputs, particularly land restoration inputs in combination with CBRDP/SILEM activities.

5.3 *POTENTIAL NEGATIVE IMPACTS*

The overall negative environmental and social impacts predicted under the second scenario for the Project is based on the following reasoning:

- Rural livelihoods and environments are often complex, unpredictable and fragile (e.g. rural communities in Burkina Faso are highly stratified and

achieving effective participation by marginalized groups, including women, youth, and migrants, may not be easy);

- Lack of adequate capacity for environmental and social screening of small scale activities may exacerbate existing environmental and social issues affecting communities within the target areas;
- Differential impacts of CBRDP/SILEM training and investments (according to gender, wealth status, or livelihood strategy) may result in some groups relying to a greater extent than others on unsustainable use of natural resources;
- Alternative livelihoods and intensification of agricultural production (including livestock), which may result in improved well-being, may also lead to an increase in areas brought under cultivation and overall numbers of livestock or tropical livestock and farming units, which may increase demand on natural resources or degrade the surrounding environment;
- Introduced systems of governance (CVGT/CIVGT/CCTP) versus traditional systems may create conflict, or contradictions may result in unsustainable agricultural or natural resource management practices;
- Even where systems of governance are strong, incentives for effective community management of natural resources in a sustainable manner may be weak in comparison to incentives for unsustainable use;
- Rapid institutional change in the formal national, provincial and community systems for governing natural resource areas and land management may create competing institutions within government and decrease overall effectiveness, especially in budget allocation and management;
- There are a significant number of NGO and development agency-financed projects throughout Burkina Faso, with considerable rural development experience, that may be undermined by the financial and political weight of the Project if they are not effectively included in the process; and
- Rising population pressures, a deteriorating resource base, desertification and drought due to climate change and extensification /intensification of the agricultural production systems often lead to an increase in land-related conflicts. The introduction of investments in these areas may attract outside immigrants that will further increase pressure on existing resources and possibly increase land-related conflicts.

However, both the Government of Burkina Faso and the World Bank have considered these risks carefully in the preparation and design of the CBRDP/SILEM, especially considering the experience gained through the implementation of the earlier pilot PNGT1.

Table 5.1 sets out the factors contributing to these risks for CBRDP/SILEM, as observed by the study team, and the features of the project design that could mitigate these risks. *Table 5.2* describes many of the proposed investment activities that can be undertaken by CRBDP and predicts many of both positive and negative impacts. This sub-project list and potential impacts is not intended to be exhaustive as the sub-projects are expected to selected and developed using a demand-based approach at the village level, with the exclusion of those activities included on the negative list of the CBRDP/SILEM implementation manual. *Table 5.3* provides a list of these negative projects.

Table 5.1 ***CBRDP/SILEM Risks Requiring Mitigation***

Risk:	*Explanation*	*CBRDP/SILEM approach*
Rural livelihoods and environments are often complex, unpredictable and fragile (e.g. rural communities in Burkina Faso are highly stratified and achieving effective participation by the marginalized, including women, youth and migrants may not be easy).	A significant body of experience from research and past/on-going development projects consistently points to the localised, diverse and complex nature of rural livelihoods. Often it is overlooked that people living in a particular local area more fully understand the local environment, interactions within their society, and their economy than outside intervening parties. It is also a challenge to achieve genuine participation on the part of stratified rural communities, especially those who are poor (possibly migrants) and by women and youth.	CBRDP/SILEM is based on a full-participatory demand-led approach but contains some restrictive measures, such as no direct funding for income generation activities, and other investments contained on a negative list.
Lack of adequate capacity for environmental and social screening of small-scale activities may exacerbate existing environmental and social issues affecting communities within the target areas.	As experience shows in other developing countries, particularly those in Africa, lack of qualified staff and mechanisms for the screening and mitigation of impacts induced from activities such as developing small-scale infrastructure may in fact exacerbate current environmental stress (deforestation, land degradation, destruction of natural habitats), and increase social tensions (lack of access to natural resources, induce conflict over limited natural resources, etc).	The Project includes a component for training and capacity building for communities and local governments. Private contractors hired for that purpose develop most village development plans, but there is a risk that without sufficient attention to environmental and social capacity building at the local government, contractor, and village level, the priority investments may not receive adequate screening and proposed mitigation. This may lead to cumulative impacts, which will require remediation.
Differential impacts of CBRDP/SILEM training and investments (according to gender, wealth status, or livelihood strategy) may result in some interest groups capturing benefits	The relationship between poverty and environment is not always straightforward. Elite groups may capture some of the intended village investments, whereas more disadvantaged groups may be forced to rely on an unsustainable use of their natural resource base.	Special attention will need to be paid to poverty-targeting within villages to ensure that investments in support activities and micro-projects are identified and implemented so as not to lead to unsustainable use or impacts on natural resources.

Risk:	*Explanation*	*CBRDP/SILEM approach*
Alternative livelihoods and intensification of agricultural production (including livestock), which may result in improved well-being, may also lead to an increase in areas brought under cultivation and overall numbers of livestock or tropical livestock units, which may increase demand on natural resources or degrade the surrounding environment.	Improved access to markets may increase incentives to increase areas under production or increase animal numbers. In the absence of viable systems for land management and natural resource protection, this may lead to overexploitation or degradation of resources in some areas.	As part of the Project's approach to monitoring and evaluation, CBRDP/SILEM must provide opportunities for unforeseen impacts to be observed and understood, and for corrective measures to be taken when and where necessary.
Introduced systems of governance (CVGT/CIVGT/CCTP) versus traditional systems may create conflict, or contradictions may result in unsustainable agricultural or natural resource management practices.	Interviews with stakeholders at the village level often revealed two systems of governance (traditional and introduced). It was not always clear how these two systems were able to coincide on issues of access to resources, land tenure, etc.	CBRDP/SILEM should seek to clarify decision-making responsibilities between traditional and introduced systems (at the time of developing the local development plan) and promote joint systems for effective management of land and natural resources (e.g. provision of legal texts giving local communities to the right to self-manage their land and natural resource base).
Even where systems of governance are strong, incentives for effective community management of natural resources in a sustainable manner may be weak in comparison to incentives for unsustainable use.	A common assumption of development projects is that community management practices necessarily lead to sustainable resource management. Whether or not it actually does depends on the community decisions and effectiveness of the community management systems. Again, there is a particular risk when communities seek to expand beyond the existing degraded natural resource perhaps due to the effects of increased population pressures.	CBRDP/SILEM carries out problem analysis and priority setting as part of participatory planning with communities (community development plan - local development plan). This approach offers the opportunity to ascertain communities' expectations on the effectiveness of their traditional or existing management practices and identify where improvements will be required.
Rapid institutional change in the formal national, provincial and community systems for governing natural resource areas may create competing or ineffective institutions within government.	Recent changes or trends in Burkina Faso include the thrust toward decentralisation with the accompanying risk of ineffective restructuring, training and empowerment to ensure a successful transition.	CBRDP/SILEM support for institutional change should be monitored carefully, in full view of political sensitivities between the different systems, and be carried out with regular consultation with the affected parties.

Risk:	*Explanation*	*CBRDP/SILEM approach*
There are a significant number of NGO and development agency-financed projects throughout Burkina Faso, with considerable rural development experience, that may be undermined by the financial and political weight of the CBRDP/SILEM if they are not effectively included in the process.	The financial size and scope of the CBRDP/SILEM is significant in comparison to the smaller scale NGO and bilaterally-funded development projects in rural areas. This may have implications for the relation between government administrations and NGOs, between existing projects, and communities, and for staff of government and NGOs.	CBRDP/SILEM should work to build capacity within national, provincial, and community administrations, and continue the collaborative approach such as supporting the CCTP, consider making use of NGOs as service providers, in addition to private sector contractors where appropriate.
Rising population pressures, deteriorating resource base and intensification of the traditional production systems have led to an increase in the number of land-related conflicts, and introduction of investments in such areas may attract outside migrants that will increase pressure on existing resources and possibly increase land-related conflicts.	CBRDP/SILEM investments may serve to pull outsiders into the recipient communities that will also seek to benefit from the improvements. This could lead to friction or conflict between local inhabitants and outsiders and put additional pressure on limited resources.	CBRDP/SILEM will work carefully with communities to devise protective measures to support sustainable investments and ensure the inclusion of migrants into new communities where CVGT/CIVGs have already been established.

Table 5.2 Potential Social and Environmental impacts of CBRDP/SILEM investments

Activity/Types of Investments	Positive Impacts	Negative Impacts	Mitigation Measures
Feeder Road Improvement/Infrastructure; • Construction and repair of rural roads; • Construction and maintenance of forest roads; • Construction of bridges and crossing structures; • Construction of "dalots"; • Construction of road embankments; • Construction of "buses," etc.	• Improvement of communication; • Connecting rural areas to principal road networks; • Access to markets, transportation of goods and services-overall positive impact on the economy; • Facilitation of communication between neighboring villages; • Accessibility to village forests or other areas for land development and use; • Protection against bush fires (firebreak); • Improvement of commercial exchanges; • Access to health and education centers.	• Destruction of vegetation in and near roadways; • Deforestation; • Increase in poaching and illegal and excessive removal of firewood and wood for rural construction purposes; • Destruction of wildlife habitat; • Impeding wildlife movement; • Reduction in biodiversity; • Water pollution and negative effect on surrounding ecosystem; • Loss of certain aesthetic values (visual impacts) from destruction of vegetative cover; • Acceleration of soil erosion due to poor maintenance and drainage of roads; • Noise and possible accidents during road construction; • Increased migration from nearby cities; • Social instability; • Spread of communicable/other diseases; • Poor planning, construction/ maintenance of roads may lead to waste of a financial capital and human resources; • Encroachment upon pasture/farm land.	• Avoid infringing on protected areas, critical habitats or areas with significant biodiversity (e.g. wetlands); • Avoid areas of soil, slope or geological instability; • Provide comprehensive community participation in planning, construction and management; • Use appropriate design and construction techniques and timing (e.g. surface drainage controls, selection and use of construction materials, build during dry season, etc.); • Migration issue to be resolved through local conflict resolution system; • Use of local labour in order to prevent spread of communicable diseases; • Construction and repair of roads are performed using local materials/materials accessible in local market in order to ensure adequate/sustainable maintenance of roads and infrastructure; • Community decision-making in selecting sites for construction in order to avoid encroachment upon productive land.

Activity/Types of Investments	Positive Impacts	Negative Impacts	Mitigation Measures
Water Supply Infrastructure • Boreholes equipped with pumps; • Rehabilitation of boreholes; • Development of artesian wells; • Development and rehabilitation of wells; • Development of water storage reservoirs; • Maintenance of water supply/storage infrastructure; • Rehabilitation of water storage reservoirs, etc.	• Supply of potable water; • Improvement of pastoral activities due to availability of water for livestock; • Availability of water for agriculture and irrigation; • Development of lowlands for vegetable and crop production; • Improvement in raising the groundwater level; • Creation of ponds favourable for fishing; • Enrichment wildlife diversity; • Improvement in health; • Shortened distance to carry water, saving women's and children's labour; • Improvement in overall well-being; • Increase in economic activity; • Social networking-increase in human capital.	• Increase in disease and insect vectors such as malaria, bilharzias, onchoceroces, schistosomiasis, trypanosomiasis; • Contaminated water by chemical pesticides and fertilizers; • Soil degradation due to salinisation or alkalisation, etc; • Flooding due to poor maintenance of storage reservoirs; • Loss of wildlife, vegetation and cultivated land; • Overuse of water and surrounding land resources due to increased population pressures; • Attraction of livestock and pressure on vegetation cover and soils with increase in erosion; • Lowering or drying up of groundwater level; • Lack of clear division of rights/responsibilities may result in maintenance problems of wells/pumps; • Lack of clear definition of user rights for wells and pumps may create exclusion of vulnerable groups; • Access to water may be captured by interest groups; • Use of foreign equipment/ materials may hinder maintenance of pumps/wells.	• Employ suitable prevention and mitigation measures, including education of local population (e.g. good drainage around water supply points); • Protect groundwater sources from surface runoff and pollution; • Ensure planning, design and maintenance of infrastructure is appropriate to local needs, traditions, culture and desires; • Ensure sufficient community participation and organization for effective planning and management of infrastructure; • Include downstream water users (e.g water supply, irrigation, livestock watering) in planning of water storage reservoirs; • Identify proper mechanism of rights and responsibilities over well/pump/reservoir usage through participatory village focus groups; • Ensure that local accessible materials are used when developing/ rehabilitating wells in order to provide maintenance; • For each pump/well/reservoir/ borehole establish clear guidelines of user rights through participatory focus groups; • Ensure that access to water pumps/reservoirs is equitable to prevent capture by interest groups.

Activity/Types of Investments	Positive Impacts	Negative Impacts	Mitigation Measures
Social and Economic Infrastructure • School construction and rehabilitation; • Literacy centers; • Village pharmacies; • Dispensaries; • Health posts; • Agricultural storage warehouses; • Cereal banks, etc.	• Facilitate the placement of teachers; • Improved education levels; • Access to education, improved literacy; • Increased school attendance by young;. • Improved health care; • Improved storage and conservation of agricultural inputs and production; • Increased productivity; • Improved well-being; • Employment generation.	• Sanitation problems; • Some construction related problems but usually minor in nature; • Medical waste disposal; • Storage of hazardous materials • Spread of disease from incoming laborers; • The vulnerable groups (women, poor children, migrants, trans-humant pastoralists) and the poor) may not benefit from infrastructure construction and rehabilitation; • Schools/health posts may become abandoned due to the lack of commitment; • Building infrastructure system alone without needs assessment may not benefit the community; • Infrastructure investments may be misappropriated by governments;	• Ensure inclusion of adequate sanitation facilities and maintenance; • Ensure planning, design and maintenance of infrastructure is appropriate to local needs, traditions, culture and desires; • Mandatory incineration of medical waste and proper storage of other hazardous materials • Health checks (especially in regards to HIV) for incoming labourers • Conduct mandatory participatory focus groups with the vulnerable groups regarding infrastructure projects • Before the start of each infrastructure project, develop comprehensive organizational and maintenance plan, commitment from local government and public to maintain school supplies, medical supplies, etc. • Conduct needs assessment in areas of health, education and agriculture to ensure proper allocation of resources (for example, it may be the case that vaccination/diagnostic tools are more needed than the actual rehabilitation/construction of a health post) • Establish transparent monitoring and evaluation system

Activity/Types of Investments	Positive Impacts	Negative Impacts	Mitigation Measures
Soil and Water Conservation • Rock bunds (cordons pierreux) • "Zai" (small cultivated soil pockets incorporating manure with seed) ; • Composting pits; • Ravine recovery and protection; • Re-vegetation; • Permeable dikes; • River or stream bank protection, etc.	• Improved land use; • Improved drainage and runoff protection; • Land recovery for cultivation; • Improved soil quality (fertility); • Improved water retention; • Restoration of vegetative cover; • Erosion control; • Improved productivity; • Improved well-being/livelihood security; • Employment generation; • Improved food security.	• Soil and groundwater pollution if pesticides, herbicides and fertilizers are used; • Some households' livelihood opportunities may be restricted due to conservation efforts.	• Employ suitable prevention and mitigation measures, including education of local population on proper handling, use and disposal of chemical pollutants; • Livelihood diversification opportunities identified through participatory needs assessment; • Conservation efforts need to be carried out with minimum disruption to productive activities.

Activity/Types of Investments	Positive Impacts	Negative Impacts	Mitigation Measures
Structural Support for Improving Animal Husbandry • Grazing land rehabilitation; • Marking off pasture lands; • Strengthening of a land tenure system • Vaccination parks; • Reorganization and corridors for transhumant populations; • Milk production improvement; • Fattening of livestock (bovine, porcine, ovine, caprine); • Improved pasture management and production; • Forage collection and storage (bales); • Forage storage structures.	• Modernization of pastoral practices; • Secure access to pasture lands • Land tenure institutional mechanism established at village, district and provincial levels • Improved livestock productivity; • Improved livestock genetics; • Improved pasture management; • Improved livestock distribution; • Livestock manure collection and use; • Reduced conflict between livestock herders and farmers; • Access corridors could serve as fire breaks; • Improved animal health; • Improved human health; • Improved food security; • Increased livelihood security.	• Risk of concentrating livestock numbers; • Over grazing and loss of vegetative cover; • Pressure on water points and resulting risk of pollution; • Livestock diseases and sickness if numbers too high and too concentrated; • Increased conflict between livestock herders and farmers/local population; • Vulnerable groups' livelihoods made more insecure.	• Limit animal numbers or control access to grazing lands; • Control length of grazing time through introduction of rotational grazing, development of dry-season grazing areas and reserves; • Strategic development and placement of water points; • Maintain regular animal health monitoring and vaccination programs; • Establish conflict resolution mechanism for each project village under the land tenure pilot project; • Integrate the vulnerable groups into each pasture management/land tenure project by making it a requirement to integrate the interests of the poor and vulnerable into the pasture management/land tenure projects.

Activity/Types of Investments	Positive Impacts	Negative Impacts	Mitigation Measures
Structural Support for Improving Agricultural Production • Vegetable and multi-purpose gardens; • Construction and rehabilitation of irrigation schemes downstream of water reservoirs; • Modernization and diversification of agricultural production; • Strengthening of land tenure system.	• Protection against soil erosion; • Improved soil fertility; • Diversification of crop production; • Intensification of crop production; • Improved land use; • Reduction of required time inputs allowing time for other activities; • Increased crop yields; • Food security; • Discouraging outward migration; • Livelihood security through improved land tenure and agricultural diversification/ intensification; • Improved food security.	• Loss of vegetative cover, decrease in soil fertility; • Possible pesticide, herbicide and fertilizer use leading to soil and water pollution; • Irrigation system may break down and not be repairable; • Unproductive use of labor; • Decrease in productivity • Conflict over user rights of irrigation systems; • Potential diversion of water resources from its natural course/location ; • Vulnerable groups may loose access to water resources or land.	• Avoid infringing on protected areas, critical habitats or areas with significant biodiversity (e.g. wetlands); • Apply pesticides, herbicides and fertilizers at recommended times and doses; • Educate population in the proper use, storage and disposal of potential chemical pollutants; • Ensure that construction and rehabilitation of irrigation systems are carried out by using materials easily accessible through local market; • Conduct needs and sustainability assessment for each agricultural activity (irrigation, vegetable growing, etc); • Ensure that inhabitants around water reserves are not deprived of access to water due to irrigation and other activities; • Ensure that the interests/rights of the vulnerable groups are integrated into the activities.

Activity/Types of Investments	Positive Impacts	Negative Impacts	Mitigation Measures
Structural Support for Improving Forestry • Development of natural and artificial forests; • Establishment of nurseries; • Recovery and restoration of deforested zones by direct seeding; • Protection/conservation of nature reserves & fragile ecosystems; • Development of pastoral zones; • Reforestation; • Develop plantations for firewood and other uses; • Creation of village forests; • Reorganization and training of communities in village forest management; • Training in improved firewood use ("foyers améliorés); • Stream or river bank protection; • Wildlife protection; • Management of hunting and fight against poaching; • Development of apiculture in forested areas; • Development of eco-toursim; • Fight against bush fires or forest fires • Construction and maintenance of forest roads; • Selective seasonal burning; • Joint management of classified forests.	• Qualitative and quantitative regeneration of vegetation; • Improvement in wildlife habitat; • Inward migration of wildlife; • Reestablishment of forest tree species through forest plantations; • Soil fertility improvement and erosion control; • Improved soil drainage; • Availability of firewood and wood for other uses; • Reduced energy consumption; • Reduction in bush fires; • Better organization of hunting; • Reduction in poaching; • Development of eco-tourism; • Recovery and restoration of deforested areas by direct seeding; • Introduction of agroforestry; • Enhancing general biodiversity; • (Temporary) employment generation.	• Plantation made up of mono species more vulnerable to disease, insects, fire, etc; • Use of certain tree species can lead to decrease in soil fertility, nutrients, water, etc; • Harvesting by clear cutting can expose soil to greater insilation leading to high soil water evaporation, degradation, etc; • Increase in population pressures on forested areas with unintended results; • Introduction of foreign species may potentially disrupt eco-balance; • Households may lack fuel if alternative measures are not taken into an account; • People's livelihoods that are dependent on forestry/forest resources may worsen (eg. hunters).	• Consider use of a variety of multipurpose and fast-growing indigenous tree species and management practices to enhance disease, insect, and fire resistance; • Select tree species and management practices that promote sustainable soil and water conservation; • Educate local population on proper harvesting techniques and practices; • Include local population in the design, site selection, development and management of forested areas; • Take special care of not introducing foreign plant species that may cause disruption in eco-balance; • Introduce sustainable practices of fuel wood gathering and hunting (rather than just restrictive measures).

Table 5.3 ***Negative List of Activities and Projects Ineligible for Investment***

- *Religious infrastructure (places of worship);*
- *Administrative buildings (except buildings for health and primary education personnel);*
- *Installation and equipment for sports and leisure activities;*
- *Secondary education and university institutions;*
- *Hospital centers;*
- *Maternity centers;*
- *Projects which have an environmental impact such as in the case where the mitigation activities are difficult to administer by the beneficiaries or cost more than 10% of the total investment.*
- *Activities already proposed through other sources of financing or already registered in the regional or national public development programs through which the finances were acquired;*
- *Income generating activities (shea butter press, boutiques, small business, etc.);*
- *Purchasing of mechanical materials (trucks, tractors, etc.);*
- *Production or purchasing of tobacco and drugs;*
- *Renovation of public bars or pubs.*

Source: Burkina Faso Ministry of Agriculture. March 2002. PNGT2 Manuel d'Execution. Page 19-20.

Under the proposed SILEM program, the overall environmental and social impacts are more difficult to predict. However, the program designers have identified a number of risks that may be encountered during implementation, and these risks are presented in the PAD. Some of the overall negative environmental and social impacts may include:

- Underestimation of progress made toward achieving political and administrative decentralization and subsequent ineffective devolution of the responsibility for IEM to local governments and communities to achieve sustainability;
- Acceleration in land degradation and desertification due to increased pressure on land resources despite improvements in soil and water management/conservation practices and infrastructure;
- Decrease in agro-biodiversity (biological diversification of crops and livestock varieties/ecotypes) due to unwillingness to adopt and cultivate certain crop varieties in lowlands after introduction and implementation of improved lowland soil and water management infrastructure and practices (e.g. farmers favoring a mono-culture such as rice);
- Increased pressure to develop lowland areas without adequate investment in necessary water control infrastructure, both upstream and downstream to protect and control against destructive and erosive peak water flows (e.g. resulting in soil erosion, sedimentation, and damage to structure and crops);
- Increased pressure on upland area surrounding developed lowlands resulting in land degradation, deforestation, livestock pressures, etc.;
- Increased and unsustainable use of biological diversity in natural habitats such as lowland gallery forests, sacred forests, and reserves of medicinal

plants, of various types of woods, birds, small animals, microorganisms and grass vegetation despite investments made to encourage the contrary (e.g. encroachment by non-stakeholders);

- Insignificant measurable positive impact on the protection of international waters (e.g. Volta and Comoé rivers) and their tributaries through limited restoration of degraded river banks (from erosion and field encroachment) or insignificant reduction in the pollution of international waters from controlling soil sedimentation and use of agro-chemicals;
- Inability to adapt GIS tools to the level of local communities and local governments for IEM land use planning;
- Lack of progress toward establishing land tenure security and access to agricultural inputs, particularly land restoration inputs in combination with CBRDP/SILEM activities.

Table 5.4 is taken from the SILEM PAD and provides an indication of the potential environmental and social risks possible under the Program, along with an indicative list of mitigation measures that could be followed.

Table 5.4 Potential Environmental and Social Risks of SILEM Program

Project component and activities	*Environmental Risks*	*Social Risks*	*Mitigation Measures*
1. LOCAL CAPACITY BUILDING			
Land use Planning with GIS as an input for the design of local development plans	Planning for new development or rehabilitation of lands with ensuing environmental risks	Certain vulnerable social groups effectively excluded from planning process	Identification and protection of important natural habitats, participation of all social groups in decision making process
Information and Education on National NRM/Environment Action Plans	None	None if training directed at a level higher than village level	None
Sustainable NRM financing mechanisms/ Partnership Office	None	None	None
Initiation of decentralized NRM/IEM financial systems	None	None	None
2. LOCAL INVESTMENT FUND			
Innovative soil and water management/conservation techniques & infrastructure	Significant impacts possible depending on nature, extent, activities to be undertaken on sub-project.	Activities can displace certain segments of population or restrict access to resources.	Undertake careful environmental and social screening and implement necessary mitigation measures
Agro-biodiversity seed multiplication and research activities	Displacement of non-agricultural species	Dependence on annual multiplication and distribution of seed	Ensure continuity of non-agriculture biodiversity through restricted or managed land clearing.
Crop-livestock-fishing integration techniques and infrastructures	Pressure on land and water resources	Potential conflict among participants	Ensure integration techniques and infrastructures are well designed and sustainable
Agro-sylvo-pastoral models testing and dissemination	Pressure on land resources and natural habitats	Potential conflict among participants	Ensure models are well designed and tested before dissemination, establish suitable protection measures

Project component and activities	*Environmental Risks*	*Social Risks*	*Mitigation Measures*
Bio-diversity promoting commercial enterprises.	Pressure on use of bio-diversity resources, encroachment on cultural properties such as sacred forests.	Elite capture, exclusion of disadvantaged groups.	Ensure use of bio-diversity resources is sustainable and all social groups included in decision-making process, include appropriate protection measures.
Production and marketing of agro-minerals for soil fertility restoration.	Health and environmental risks associated with inappropriate use and handling agro-minerals.	Unequal social distribution of agro-minerals.	Ensure proper health and safety precautions, and equitable distribution.
Production and marketing of organic manure and of soil cover crops.	Health and environmental risks associated with inappropriate use and handling of organic manure .	Unequal access to residues for making organic manure and cover crops.	Ensure proper health and safety precautions, and equitable distribution.
Large scale NRM/Environment studies	None	None	None
3. INSTITUTIONAL CAPACITY BUILDING			
Creation of adequate NRM policy environment	None	None	None
HR Training for Global Environment conventions and negotiations	None	None	None
NRM/Environmental Policy forum	None	None	None
4. LAND TENURE SECURITY			
Support to local land conflict resolution mechanisms.	None	Potential for involuntary resettlement issues.	Ensure necessary precautionary measures are considered and implemented.
5. PROGRAM COORDINATION, M&E			
Program coordination, M&E	None	None	None

5.4 *LOCALISED NEGATIVE IMPACTS*

Most of the developments or micro-projects planned under the local investment fund component of CBRDP/SILEM will be small in scale: therefore the significance of the *direct* negative environmental and social impacts is likely to be small. This is especially the case in comparison to larger-scale developments elsewhere in Burkina Faso, for instance large-scale roads or large-scale dams. *Table 6.2* sets out the predicted impacts of the likely micro-projects to be financed by the local investment fund.

Activities planned under the SILEM program could have significant environmental impacts, especially when considering integrated ecosystem management in selected lowland sites (100 such sites are expected to be developed in during the first phase of the program). Experience in lowland development has shown that unless lowland sites are carefully selected and any required infrastructure and improvements and necessary protection measures are well designed and constructed, this can lead to serious upstream and downstream impacts. Also, developing these lowlands can create additional population and livestock pressures on the lowland itself and the surrounding environment. Intensification of agricultural activities (though development and introduction of agro-biodiversity) can result in decreasing existing bio-diversity and create access problems for wildlife.

5.5 *CUMULATIVE IMPACTS*

Many CBRDP/SILEM micro-projects are planned which may in some areas may result in cumulative impacts on natural resources. Cumulative impacts are impacts which may result from individually small-scale activities with minimal impacts but which over time can combine to have a significant impact.

Examples are:

- Deforestation due to the exploitation of forest resources for such uses as firewood, construction materials, etc.;
- Development of lowlands which may have both upstream and downstream impacts (e.g., increase in soil erosion, decrease in available water resources downstream resulting in less water flowing into international waterways);
- Bush clearing (using slash and burn methods) of marginal forest or bush land with subsequent depletion of soil fertility;
- Potential impacts on groundwater, owing to the construction of numerous wells and to the introduction of numerous small-scale irrigation works and potential cumulative impacts on water users (especially downstream users of potential river and streams);

- Resettlement, displacement or loss of access to assets due to the acquisition of land for the construction of schools, health centers, storage warehouses, cereal banks, wells, etc.;
- Illegal poaching of wildlife due to expansion of land under cultivation, illegally starting bush fires or increased proximity and access to protected areas through construction of rural feeder and forest roads.
- Attraction of large migrant populations to communities that have successfully introduced improve social infrastructure (such as schools, health centers or water sources) resulting in pressures that lead to overcrowding, depletion or constraint of resources (e.g., space, supplies, water, etc.)

Cumulative impacts can also be defined as impacts which potentially develop from the combined impacts of more than one project or large scale program occurring with the same area of influence and time span. In such cases, cumulative impacts will have to be assessed based on the combined affects of potential impacts from the various program inputs. Considering the cumulative impacts of the CBRDP/SILEM programs, stakeholders will be provided with an opportunity to learn how to avoid or mitigate localized impacts from initial sub-projects, so that measures can be integrated into subsequent activities. *Chapter 6* provides a list of triggers which can be used to determine whether the programs may result in cumulative impacts, and if so, what tools are required for mitigation.

5.6 *STRATEGIC IMPACTS*

The location of certain small-scale activities such as feeder roads, water reservoirs and development of irrigated agricultural activities downstream from small dams might also have strategic impacts, which requires a more detailed assessment in relation to the types of sector policies and land management plans that the GoBF is advocating (e.g., how feeder roads may fit into the overall transport sector policy in Burkina Faso). , Infrastructure such as feeder roads requires an assessment of the location and design to take into account the potential impacts that the road may have on the natural resources (soil erosion, encroachment on protected areas, changes to surface run-off, dust, etc.) and on the social environment (mobility of communities, migration of people, introduction of diseases, etc.).

With respect to the SILEM program, the stated objective is to focus resources on achieving significant local, national, regional and global environmental objectives. The program intends to concentrate on the development of lowlands but it is unclear whether investments will tend toward the protection of existing lowlands for conservation purposes (e.g., biodiversity, wildlife, etc.) or toward development for agricultural and other purposes (e.g., agro-biodiversity, control structures, cultivation, etc.). The two directions are not necessarily exclusive, if SILEM succeeds in effectively promoting integrated ecosystem management, then

environmental objectives and the goal to promote sustainable development and reduce poverty can be attained.

Other strategic issues which need to be addressed under the Project are the issue of land degradation, pollution, medical and domestic waste disposal, pest management and sensitivity to vulnerable groups. These are discussed below.

5.6.1 *Impact on ecological resources and land degradation*

Many of the proposed activities and sub-projects can lead to both localized and cumulative impacts on such areas as bio-diversity, lowlands, forests, soil and water quality, etc. Land degradation due to sub-projects that involve construction, deforestation, and induced impacts associated with small-scale feeder roads, or any development that induces concentration of people, agriculture or livestock in particular areas. The environmental and social screening tools provided in *Chapter 6* will be used to identify and mitigate the potential impacts discussed as they related to certain types of community investments.

5.6.2 *Potential sources of pollution*

With respect to CBRDP/SILEM micro-project investments, there is a possibility that development of social and economic infrastructure can lead to pollution of watercourses from increased generation of solid waste and wastewater due to inadequate attention being paid to inclusion of proper sanitation facilities or measures.

Regarding the SILEM program, the promotion of the use of agro-minerals and organic manure can lead to pollution concerns, especially due to surface runoff into adjacent water sources, including infiltration into ground water. This will be carefully monitored via the annual reporting tools provided in *Chapter 6* and training will provided to communities in the proper handling and application of these materials as part of the Local Capacity Building component.

5.6.3 *Medical waste disposal*

CBRDP/SILEM activities could generate small amounts of packaging associated with pharmaceuticals, drugs or medical waste of any kind and this carries disposal risks. Indiscriminate disposal carried risks for human and animal health, pollution of watercourses, and land or water resource contamination in localized areas.

Waste categorized as infectious or bio-hazardous is capable of spreading infectious disease, and has become a very significant issue especially for HIV/AIDS- contaminated materials. It is especially important to develop and

apply effective medical waste handling and disposal methods, with the support of the appropriate line agencies or ministries (i.e. Ministry of Public Health for humans, Ministry of Livestock, Fisheries and Animal Industries for animals).

Because CBRDP/SILEM support will be for micro-projects both for humans and animals, it is proposed that an appropriate mini-medical waste plan be developed for facilities or activities generating such wastes and put in place before full operation can begin.

A typical mini- medical waste disposal plan would need to consider handling and disposal of waste products as illustrated in *Box 5.2.*

Box 5.2 ***Issues to be Addressed in a Mini-Waste Management Plan***

- Laboratory wastes - specimen or microbiologic cultures, stocks of infectious agents, live and attenuated vaccines, and culture mediums;
- Blood or body fluids - liquid blood elements or other regulated body fluids, or articles contaminated with blood or body fluids;
- Sharps –items such as syringes, needles, blades, broken glass;
- Contaminated animals - animal carcasses, body parts, bedding materials;
- Surgical specimens - human or animal parts or tissues removed surgically or by autopsy;
- Isolation waste – waste contaminated with excretion, exudate, or secretions from humans or animals who are isolated due to the highly communicable diseases such as : Congo-Crimean hemorrhagic fever, Tick-borne encephalitis virus complex (Absettarov, Hanzalo, Hypr, Kumlinge, Kyasanur Forest disease, Marburg disease, Ebola, Junin virus, Lassa fever virus and Machupo virus.

5.6.4 Pest Management and Chemical Use

Small-scale agricultural projects may involve strengthening existing practices, introducing, diversifying or the intensification of crop production.
Support for the development of small-scale agriculture or certain livestock activities (e.g. tick dips) may lead to the introduction or increased use of pesticides and other agricultural chemicals such as herbicides and fertilizers to promote crop growth. Pests are organisms that compete with humans, domestic animals, or crops for nutritional resources. They include species of insects, mites, nematodes, mollusks, plant pathogens, vertebrates and weeds.

It is critical that appropriate planning, design and management be adopted for the handling, use and management of all agricultural chemicals to avoid potential negative environmental impacts. The project will support the development of smaller-scale projects therefore it is anticipated that mini-pest (or chemical) management plans will satisfy local needs. This plan should address the following issues listed in *Box 5.3*.

Box 5.3 ***Issues to be addressed in a Mini-Pest Management Plan***

- Proper use of agricultural chemicals such as fertilizers to avoid reduction in soil and groundwater quality;
- Prevent fertilizer runoff into surface water sources to avoid negative impact on aquatic environments;
- Proper use of pesticides and herbicides to avoid contamination of crops, soils and water.
- Proper use, handling and storage of all agricultural chemicals to avoid adverse health impacts on rural population;
- Methods to ensure that banned or unauthorized agricultural chemicals are not used;
- Proper handling and disposal of unused agricultural chemicals and packaging materials (e.g. sacks, plastic containers, etc.).

5.6.5 Impact on vulnerable groups

All activities planned by both CBRDP/SILEM and SILEM may not bring the intended benefits to certain vulnerable groups and to the poor, and may further contribute to inequitable distribution of resources and marginalizing of these groups. The development of a local development plan (PGT) seeks to avoid this, however the consistency of active participation by vulnerable groups may vary, and cannot be ensured. Further, the levels to which CVGT/CIVGTs are induced to select development priorities by external forces, and the ability of vulnerable groups and the poorer segments of the population to express their views and needs, cannot be stated at this time.

Thus, when planning activities and sub-projects, while it is crucial for communities to receive support from skilled facilitators and specialists in methods of community participation, project planning and management. It is equally important that follow up be made (possibly by the CBRDP/SILEM provincial teams) in order ensure that the concerns of the poor and vulnerable groups have been taken into consideration over time.

6 REPORTING AND RESPONSIBILITIES IN THE ESMF

This chapter sets out the reporting systems and responsibilities of officers in implementing the ESMF. The chapter begins with details of issues that will be addressed by the ESMF, and the specific next steps to be taken to ensure adherence to the ESMF. It then describes the various elements of the ESMF including:

- Flowchart for reporting and advice;
- Screening checklist for community micro-projects under *Local Investment Fund* component;
- Screening checklist for inter-community projects under *Local Capacity Building, Local Investment Fund* and *Land Tenure Security Pilot Project* components;
- Annual review report forms for CVGT, CIVGT officers, Provincial Coordination Unit (PRCU) officers and the Project Coordination Unit (PCU) officer;
- Explicit descriptions of roles, accompanied by terms of reference.

6.1 KEY ISSUES AND PROPOSED ACTIONS WITHIN THE ESMF

Box 6.1 sets out proposed actions against a list of ten key issues. In summary, the main measures to address these issues are:

Box 6.1 ***Proposed Actions for Implementation of Environmental and Social Mainstreaming***

- At the national level, a staff member will be appointed within CBRDP/SILEM PCU with a specific responsibility for addressing environmental and social issues, in line with the World Bank's safeguard policies. The ESMF study team suggest that the title of *'Natural Resources Management (NRM) Officer'* be used by the PCU;
- At the provincial level, at least one full-time officer (possibly two) in each PRCU will be appointed to provide technical backstopping on all aspects of environmental and social mitigation. The title for these officers used below is *'Environmental and Social Mitigation Officers'*;
- These *Environmental and Social Mitigation Officers* will also be trained in the Project's Resettlement Policy Framework in order to support the CVGTs and CIVGTs to identify and promote sustainable practices for land management, land tenure, land acquisition and involuntary resettlement; and conflict resolution.
- An annual environmental and social performance audit, to be carried out by an independent consultant;
- The *Natural Resources Management Officer* will stimulate CVGTs and CIVGTs to develop strategic approaches to environmental sustainability in their communities/inter-village committees.
- At more practical levels, specific studies would be carried out on issues of environmental and social management assessment, and the details of the ESMF set out in this chapter will be integrated into the sub-project cycle.

6.1.1 *Next steps*

The specific next steps to be taken are, in chronological order:

- CBRDP/SILEM PCU to consult with ASPEN and World Bank on this ESMF;
- CVGT/CIVGT officials to consult with PRCU on the ESMF, or stimulate their operation in cases where they are yet to be formed;
- Consultants appointed to revise and prepare the CBRDP/SILEM project implementation manual (PIM) so as to integrate the Environmental and Social Management Framework (and the Resettlement Policy Framework and Process Framework) into the project cycle set out in the PIM;
- Provincial Coordination Unit (PRCU) staff to consult with CVGT/CIVGT officials on ESMF (since many CVGTs are newly set up or just beginning to operate)
- Appraisal mission to confirm the proposed operation of the ESMF with CBRDP/SILEM PCU;
- CBDRP/SILEM to find a suitable candidate for *Natural Resources Management Officer* in order that they can be in position in advance of the integration of SILEM into CBRDP;
- CBRDP/SILEM to find one or two suitable candidates for *Environmental and Social Mitigation Officers* for each province;
- CBRDP/SILEM PCU to confirm and develop the proposals for training and capacity building;
- Inclusion of discussion on the ESMF in the next PCU Project workshop(s) and At CCTP quarterly meetings.

Table 6.1 Issues addressed by the ESMF

Issue	Mainstreaming or mitigation measures	Responsibility for action	Timing
1. Requirement for the mainstreaming of the Environmental and Social Management Framework	a. Appoint CBRDP/SILEM PCU NRM Officer	CBRDP/SILEM PCU and PRCU	From CBRDP/SILEM start
	b. Appoint PRCU Environmental and Social Mitigation Officer(s)	CBRDP/SILEM PCU and PRCU	From CBRDP/SILEM start
	c. An annual environmental performance audit and social assessment carried out by an independent consultant(s)	CBDRP/SILEM PCU	Annually
	d. Integration of environmental review within mid-term review, ICR, and/or World Bank missions	CBRDP/SILEM PCU	At MTR etc
2. Weak capacity for environmental and social management at provincial levels	a. Develop partnerships with NGOs for environmental and social management	Provincial Environmental and Social Mitigation officers with PRCU	Ongoing
	b. Stimulate the operation of the CVGT/CIVGTs	Environmental and social mitigation officers with PRCU	By January 2004
	c. Address budgetary constraints by earmarking finance for ongoing environmental and social management	CBRDP/SILEM PCU	During project preparation
3. Opportunity to contribute to positive impact on natural resources management	a. Assign sufficient budget for 'support to NRM activities and mechanisms'	CBRDP/SILEM PCU	Done (during World Bank pre-appraisal mission)
4. Mainstreaming Bank safeguard policies into the PCU and PRCUs	**b. Provide sufficient training and support to PCU and PRCUs to understand and apply Bank safeguard policies**		Ongoing
5. Requirement for land tenure strengthening and promoting decentralized governance	a. Continue to advocate optimal land policy development	CBRDP/SILEM PCU/PRCU	Ongoing
	b. Identify and advocate reform of policies that limit sustainable pastoral and agricultural development	CBRDP/SILEM PCU NRM Officer PRCU	Ongoing
	a. Engage community leaders in development of sustainable community-based land tenure practices and mechanisms for conflict resolution	PRCUs with CCTP support	Ongoing
	b. Sensitise community leaders and community associations, and stimulate thinking towards appropriate models for relation of communities with government	Contract Service Providers (CSPs) with support from PRCUs	From CBRDP integration with SILEM
6. Cumulative impacts on some environmental resources	a. Carry out assessments of cumulative impacts on groundwater, surface water resources, pastoral resources, and use of externally sourced construction materials.	CBRDP/SILEM NRM Officer PRCU to oversee	As required

Issue	Mainstreaming or mitigation measures	Responsibility for action	Timing
	b. Assessments to be triggered, using criteria set out later in this Chapter	PCUs	As required
	c. Sensitise communities to issues of cumulative impacts.	PRCUs with support from CSPs wi	By January 2004
	d. Carry out two or three 'demonstration' studies in selected provinces.	CBRDP/SILEM NRM Officer	By January 2004
7. Optimum integration of technical advice with a demand-driven, participatory approach	a. Provincial-level workshops to reach consensus among government officers and NGOs on optimum integration of technical advice	PRCUs with CCTP support	By January 2004
	b. Sensitise communities to the range of technical advice available, and their responsibility choose whether they require technical advice (and in what)	CSPs and PRCUs	By January 2004
8. Need to provide advice on relevant environmental law to communities	a. Include relevant clause in the MoU's signed with communities.	PRCUs and CCTPs	From CBRDP and SILEM integration
	b. Provide information on relevant environmental laws to communities.	PRCUs with CCTP support	From CBRDP and SILEM integration
	c. To provide information on environmental laws to CSPs or where applicable, feedback the inappropriateness of particular laws to CBRDP/SILEM PCU.	Environmental and Social Mitigation officers	From CBRDP and SILEM integration
9. Opportunities for positive environmental micro-projects	a. Develop potential list, based on initial draft in Section 6.3.1 below, and raise awareness of PRCUs of these.	Environmental and Social Mitigation officers	By January 2004

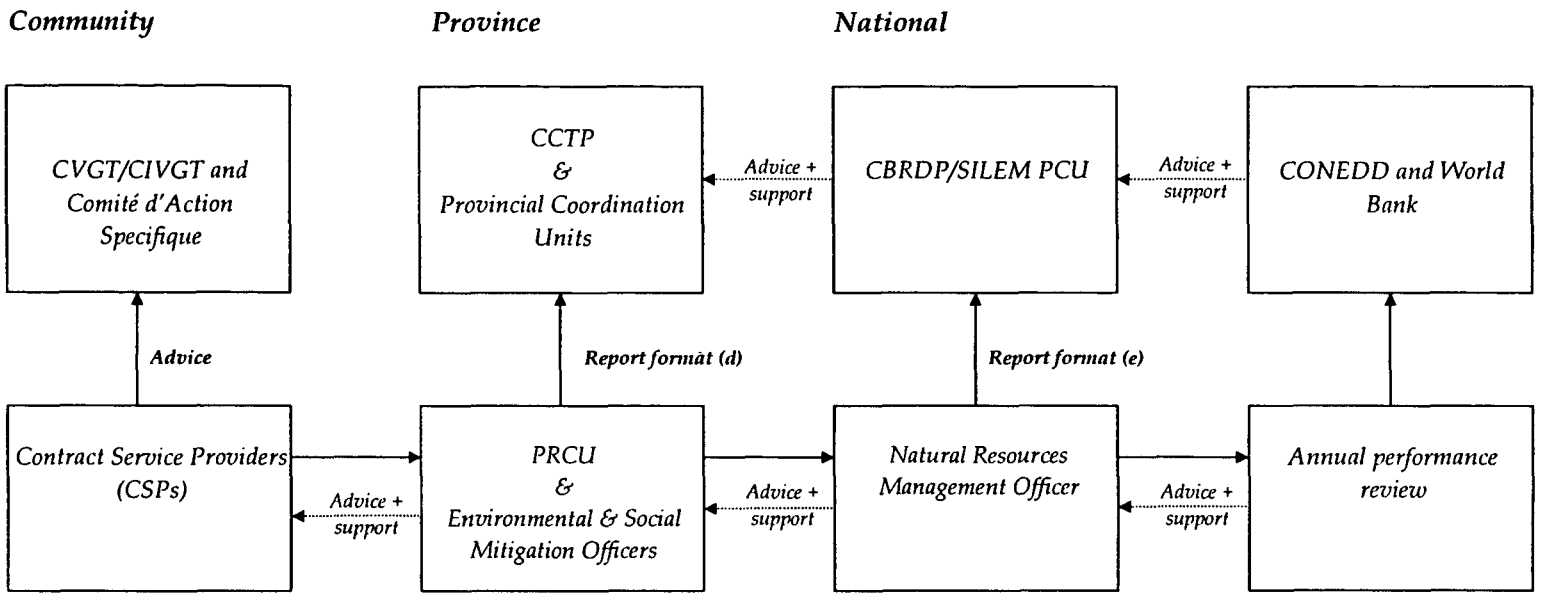
6.2 *FLOWCHART FOR REPORTING AND ADVICE*

Figure 6.1 depicts the proposed reporting lines and advisory and support mechanisms that will be used in the ESMF, while *Box 6.3* provides the summary:

Box 6.3 Proposed Reporting Lines and Support Mechanisms

- PRCUs and CSPs and will work closely with communities to provide guidance and advice on environmental and social risks of micro-projects, appropriate mitigation measures and potential environmental and social micro-projects;
- In turn the PRCUs/CSPs will receive advice and support from the CCTPs and PCU including technical advice, as well as day-to-day guidance;
- *Environmental and Social Mitigation officers* will provide an annual report on environmental and social screening and advice to both the CCTPs, as well as to the CBRDP/SILEM *Natural Resources Management officer*
- CBRDP/SILEM NRM Officer, based in the CBRDP/SILEM PCU, will provide ongoing technical advice to PRCU and *Environmental and Social Mitigation Officers* and CCTPs;
- CBRDP/SILEM NRM Officer will prepare an annual report for delivery to the PCU, and to the independent consultant appointed to carry out the annual environmental and social performance audit;
- This independent consultant will provide continuous advice and support to the NRM officer;
- An external performance review to be carried out on an annual basis and to be shared with CONEDD, the World Bank and other relevant government agencies.

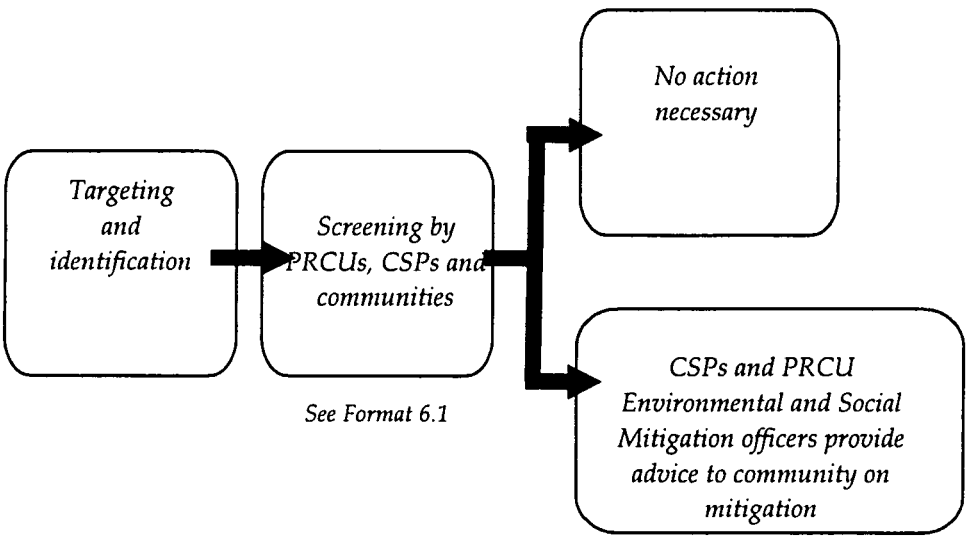
Figure 6.1 ***Flowchart of reporting and advice***



6.3 SCREENING FOR COMMUNITY MICRO-PROJECTS

Figure 6.2 sets out a simple process that Provincial Coordination Units (PRCUs) and Contract Service Providers (CSPs) will apply in working with communities to avoid and mitigate environmental impacts of community micro-projects.

Figure 6.2 ***Process of screening community micro-projects***



Following identification of micro-projects by communities with the assistance of the PRCU and CSP, the proposed micro-project is checked against a simple screening checklist (*Format 6.1*). PRCU/CSP should encourage communities to carry out this task themselves, possibly by the community animal health workers, teachers or other literate members of the community. The checklist is a simple yes/no checklist, culminating in whether specific advice to the community on environmental mitigation is required. This decision is based on likely impacts, and the level of experience in managing micro-projects within the community. CSPs will give this advice, or in cases, will call upon PRCU *Environmental and Social Mitigation officers* for specific technical advice. Screening forms will be reviewed quarterly at CCTP meetings.

The screening checklist set out in *Format 6.1* is based on a list of basic yes/no answers, culminating in a decision on whether further advice is sought, and if so from whom. There are several aspects to the rationale for the design of this checklist:

Box 6.1 ***Rationale for Design of the Screening Checklist***

- There will be thousands of micro-projects financed by CBRDP/SILEM, while there is only one or two *Environmental and Social Mitigation Officer* in each PRCU. Therefore a system that is streamlined is required, and far as is feasible, communities must be responsible for completion of screening;
- In most cases, communities will have very little knowledge of environmental and social screening, hence, for the first two years of the program, PRCUs and CSPs will be required to assist communities in using the screening forms;
- The screening prompts a list of yes/no answers in relation to questions on the location of the project and the anticipated impacts; if there are 'yes' answers to any of these questions, then the CSPs/ community are obliged to recommend a course of action;
- This action can be for the community itself to manage or avoid impacts, PRCU/CSPs to provide specific advice, or if necessary, technical advice to be sought from elsewhere;
- The forms will be reviewed by the PRCU *Environmental and Social Mitigation Officers* at the quarterly CCTP meetings before construction or operations begin.

Please note that all formats for checklists presented in this report will be copied into a Microsoft word document that can be used to provide an electronic record. Selection of the 'forms' toolbar in Microsoft word enables the document to be 'locked' by clicking on the padlock icon, so that the shaded text areas and checkboxes can be filled.

Format 6.1 *Screening checklist for community micro-projects*

Sub-project name	[type here]
Estimated cost (fCFA)	[type here]
Approximate size of the project in land area	[type here]
How was the site of the sub-project chosen?	[type here]

Location

	Yes	No
Are there environmentally sensitive areas (forests, rivers or wetlands) or threatened species that could be adversely affected by the project?	☐	☐
Is the project sited within a strictly protected area, national park, nature reserve, natural/historical monument, or area of cultural heritage?	☐	☐
Does the project reduce people's access (due to roads, location etc) to the pasture, water, public services or other resources that they depend on?	☐	☐
Will the project involve the relocation of people or herders' livestock from the site?	☐	☐
Will the project result in land acquisition and/or require land owned by an individual or family within the community?	☐	☐
	☐	☐

Impacts

	Yes	No
Does the sub-project require large volumes of construction materials (eg gravel, stones, water, timber, firewood)?	☐	☐
Will the project lead to soil degradation or erosion in the area?	☐	☐
Will the project use foreign materials that are not readily available in local markets?	☐	☐
Can the project be managed by the community with their own resources, once the CBRDP ends?	☐	☐
If the project involves construction of a public utility, such as water wells, will the project define user rights and maintenance responsibilities?	☐	☐
Will the project affect soil salinity?	☐	☐
Will the project create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater?	☐	☐
Does the sub-project have human health and safety risks, during construction or later?	☐	☐
Will the project result in conflict or disputes among communities or ethnic groups?	☐	☐
Will the project result in the involuntary resettlement of individuals or families?	☐	☐
Will the project lead to migration into a protected area (e.g. natural habitat, nature reserve or park)?	☐	☐
Will the project adversely affect any indigenous people living in the area?	☐	☐
Will the project adversely affect the livelihoods and rights of women and vulnerable groups (the elderly, the poor, etc.) ?	☐	☐
Will the project lead to changes in the distribution of people or of livestock?	☐	☐

Proposed action

Summarise the above:

☐ All the above answers are 'No'

Guidance

- If all the above answers are 'No', there is no need for further action;

☐ There is at least one 'Yes'

- If there is at least one 'Yes', please describe your recommended course of action.

Recommendation

If there is at least one 'Yes', which course of action do you recommend?

☐ Community / CVGT/ CIVGT given full responsibility to mitigate environmental and social risks

☐ PRCUs/CSPs to provide detailed guidance on mitigation of risks to the community / CGVT/CIGVT

☐ Specific advice is required from PRCU Environmental and Social Mitigation Officers in the following area(s):

[type here]

Completed by: [type here]
Name: [type here]
Position / Community: [type here]
Date: [type here]

6.3.1 *'Positive' environmental micro-projects*

The PRCU *Environmental and Social Mitigation Officers* should also be responsible for raising Contract Service Providers' awareness of the potential for communities to identify micro-projects with an explicitly 'environmental' nature. PRCUs would in turn have the responsibility for sensitising communities to the willingness of CBRDP/SILEM to finance these projects, should the communities prioritise them.

Table 6.2 provides an initial list of 'positive' environmental micro-projects which fall under the eligible investments described in the Project Appraisal Document, funded by CBRDP/SILEM or otherwise.

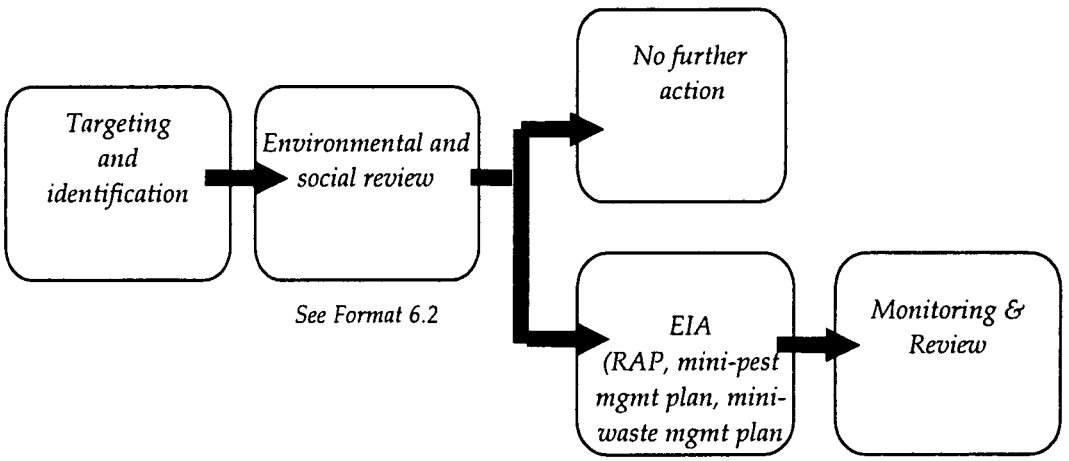
Table 6.2 ***Potential environmental community micro-projects***

o Soil and water conservation projects
o Reforestation and forest management
o Renewable energy

6.4 SCREENING OF INTER-VILLAGE PROJECTS

Figure 6.3 sets out a simple process that *Environmental and Social Mitigation Officers* will apply to prevent and mitigate against environmental and social impacts of 'inter-community' or CIVGT micro-projects financed under the Local Investment Fund component. Under the LIF, a number eligible inter-village projects have been identified in the following broad categories: forest management, pastoral management, and socio-economic infrastructure. Under the program, eligibility for these inter-village projects also requires that they are no larger than US$150,000, and that execution of these micro-projects are handled by the project's provincial operational teams. This form can also work for SILEM supported projects.

Figure 6.3 ***Process of screening inter-village projects***



The *Environmental and Social Mitigation Officers,* through the PRCUs with support of the CCTPs, will participate in the targeting and identification of the project. This will allow for a smooth process, since it will enable the officers to prevent the financing of projects for which it is impossible to mitigate negative environmental and social impacts. Following identification, an *Environmental and Social Mitigation Officer* will complete an environmental and social review checklist (*Format 6.2*). This is similar to the community micro-project checklist, but it differs in two key respects:

- It allows more information to be given on the reasoning for the yes/no answers;
- It culminates in a decision on whether a further in-depth EIA is required or whether other safeguard requirements such as a Resettlement Action Plan, a mini-pest management plan or a mini-waste management plan is necessary.

It is important to note that this screening checklist may lead to two courses of action: either a full EIA, or no further action. It is anticipated that a full EIA will not be warranted for all sub-projects. A suggested standard format for EIA is provided in *Annex 7.*

6.4.1 *Triggers for cumulative impact assessments*

The compilation of screening forms will enable each PRCU *Environmental and Social Mitigation Officer* to decide whether additional cumulative impact assessments are required to assess cumulative impacts on groundwater resources, surface water resources, and sources of materials. In each case, the officers must relate a number of projects to the receptors of impacts:

Groundwater resources

- *Trigger*: where CBRDP/SILEM finances the rehabilitation or construction of more than 15 boreholes/wells in a community;
- *Action*: Engage government and NGOs across the provinces in an assessment of the cumulative impact of all borehole rehabilitation / construction in the communities on groundwater resources;

Surface water resources

- *Trigger*: where CBRDP/SILEM finances more than 15 small-scale irrigation projects along any one watercourse;
- *Action*: Engage government and NGOs across the catchment in an assessment of the cumulative impact of all irrigation schemes extracting irrigation water from the watercourse;

Sources of materials

- *Trigger*: where CBRDP/SILEM finances more than 50 micro-projects using timber, sand or gravel or any other construction material from the same single source, whether in the local area or outside of the project area;
- *Action*: Cumulative impact assessment to ascertain significance of this extraction, to make recommendations on alternative course of action.

Format6.2 *Screening form for inter-village (CIVGT/SILEM) projects*

Sub-project name	[type here]
Estimated cost (fCFA)	[type here]
What is the project objective and activities?	[type here]
Approximate size of the project in land area	[type here]
How was the site of the sub-project chosen?	[type here]

Location

	Yes	No
Are there environmentally sensitive areas (forests, rivers or wetlands) or threatened species that could be adversely affected by the project?	☐	☐
If 'Yes', give details: [type here]		
Is the project sited within a strictly protected area, national park, nature reserve, natural/historical monument or area of cultural heritage?	☐	☐
If 'Yes', give details: [type here]		
Does the project reduce people's access (due to roads, location etc) to the pasture, water, public services or other resources that they depend on? If 'Yes', give details: [type here]	☐	☐
Will the project require the acquisition of land (public or private) for development of the micro-project?	☐	☐
If 'Yes', give details: [type here]		
Will the project involve the relocation of people or herders' livestock from the site?	☐	☐
If 'Yes', give details: [type here]		

Impacts

	Yes	No
Does the sub-project require large volumes of construction materials (eg gravel, stones, water, timber, firewood)?	☐	☐
If 'Yes', give details: [type here]		
Will the project lead to soil degradation or erosion in the area?	☐	☐
If 'Yes', give details: [type here]		
Will the project use foreign materials that are not readily available in local markets?	☐	☐

If 'Yes', give details: [type here}		
Can the project be managed by the community with their own resources, once the CBRDP/SILEM ends?	☐	☐
If 'Yes', give details: [type here]		
If the project involves construction of a public utility, such as water wells, will the project define user rights and maintenance responsibilities?	☐	☐
If 'Yes', give details: [type here]		
Will the project affect soil salinity?		
If 'Yes' give details [type here]	☐	☐
Will the project create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater?	☐	☐
If 'Yes', give details: [type here]		
Does the sub-project have human health and safety risks, during construction or later?	☐	☐
If 'Yes', give details: [type here]		
Will the project result in conflict or disputes among communities or farmers, or migrants?	☐	☐
If 'Yes', give details: [type here]		
Will the project lead to changes in the distribution of people or of livestock?	☐	☐
If 'Yes', give details: [type here]		
Will the project lead to migration into the area?	☐	☐
If 'Yes', give details: [type here]		
Will the project adversely affect any indigenous people living in the area?	☐	☐
If 'Yes', give details: [type here]		
Will the project result in the involuntary resettlement of individuals or families?	☐	☐
If 'Yes', give details: [type here]		
Will the project adversely affect the livelihoods and rights of women?	☐	☐
If 'Yes', give details: [type here]		
Will the project result in the introduction of pesticides or an increase of pesticide use if use of such products currently exists?	☐	☐
If 'Yes', give details: [type here]		
Will the project result in the production of waste materials (medical, domestic or construction waste) or result in an increase in waste production within the existing micro-project location?	☐	☐
If 'Yes', give details: [type here]		

Alternatives

Is it possible to achieve the objectives above in a different way, with fewer environmental and social impacts? If yes, describe these alternatives, and state why they have been rejected.

[type here]

Conclusion

Summarise the above:

☐ All the above answers are 'No'

☐ There is at least one 'Yes'

☐ Yes, the form indicates this

☐ Yes, the form indicates this

☐ Yes, the form indicates this

Safeguard Requirements

- If all the above answers are 'No', there is no need for further action;
- If there is at least one 'Yes', an EIA is required.
- If the form indicates that the micro-project will result in the production or waste materials (medical, domestic or construction), then a mini-waste management plan is required. Refer to *Chapter 5 – Box 5.2.*
- If the form indicates that the micro-project will result in involuntary resettlement, then a Resettlement Action Plan (RAP) is required. Refer to the CBRDP/SILEM's Resettlement Policy Framework.
- If the form indicates that the micro-project will result in pesticide use, then a mini-pest management plan is required. Refer to *Chapter 5 – Box 5.3.*

Which course(s) of action do you recommend?

☐ No further action
☐ EIA
☐ RAP
☐ Mini-pest management plan
☐ Mini-waste management plan

If your recommendation differs from the above guidance, please explain why.

[type here]

Completed by: [type here]

Name: [type here]

Position: [type here]

Date: [type here]

6.5 *ANNUAL REPORT FORMATS*

Forms proposed for completion on an annual basis are set out in *Formats 6.3* and *6.4* below. These will provide:

- A means of communication between provinces and the national NRM officer in the PCU, and between the NRM officer and the overall PCU;
- A paper trail of experience and issues running from year to year throughout the project;
- Practical information from which the CBRDP/SILEM *Environmental and Social Mitigation Officers* and the independent consultant used to carry out the annual performance audit can draw on.

Format.2.6 *Annual review form for PRCU Environmental and Social Mitigation Officers*

District: [type here]
Reporting year: [type here]

Community micro-projects
Please enter numbers of micro-project in the following table (refer to Table 5.3 and 5.4 for a more complete listing of micro-projects under each micro-project category):

	Approved this year	Screening form on file	Community carried out mitigation without advice	Provincial PCU provided advice on mitigation	Additional technical advice was used
Feeder road improvement/infrastructure					
Water supply infrastructure (boreholes, artesian wells, water storage reservoirs)					
Social and economic infrastructure (schools, health posts, agricultural storage warehouses, etc)					
Soil and water conservation (rock bunds, composting pits, ravine protection, re-vegetation, river and stream bank protection, etc)					
Structural support for improving animal husbandry (grazing land rehabilitation, vaccination parks, improve pasture management, etc)					
Structural support for improving agricultural production (vegetable and multi-purpose gardens, small scale irrigation, agricultural production)					
Structural support for improving forestry (development of natural/artificial forests, nurseries, protection of ecosystems, development of community forests, etc)					
Soil and water conservation/management					
Total					

Please describe the key environmental and social issues that have been identified from screening of community micro-projects:

[type here]

Were there any unforeseen environmental and/or social problems associated with any of the micro-projects?

Problem	Actions taken	Actions to be taken
[type here]	[type here]	[type here]

Did any of the micro-projects focus on environment?

☐ Yes ☐ No
If 'Yes', please describe:
[type here]

Sub-projects shared by communities (under the Local Investment Fund component)
Please enter numbers of sub-projects in the following table:

	Approved this year	Environmental review form on file	EIA completed
Soil and water conservation			
Reforestation and management			
Water supply infrastructure			
Feeder road improvement/infrastructure			
Total			

Results of EIAs and other required safeguard management plans

Type of and number of projects that have been subject to EIA	Impacts identified included:	How successful was the assessment in ensuring that mitigation or monitoring proposals were carried out? If not, why not?
[type here]	[type here]	[type here]
Type and number of projects that required a mini-pest management plan	Impacts identified included:	How successful was the assessment in ensuring that mitigation or monitoring proposals were carried out? If not, why not?
[type here]	[type here]	[type here]

Type and number of projects that required a mini-waste management plan	Impacts identified included:	How successful was the assessment in ensuring that mitigation or monitoring proposals were carried out? If not, why not?
[type here]	[type here]	[type here]

Results of RAPs

Type and number of projects that have been subject to a RAP	Number of PAPs and area and value of land and assets acquired:	Have the PAPs been fully compensated? Has effective monitoring been carried out? If not, why not?
[type here]	[type here]	[type here]

Natural resources management

Were you or your predecessor involved in the targeting or identification of any sub-projects?

☐ Yes ☐ No
If 'Yes', please describe:
[type here]

Have activities in "natural resources management" been carried out in your province? If 'yes', please describe. If 'No' tick here ☐

Activity, review or study	Summary of key conclusions	Was the work successful? eg were its recommendations carried out? If not, why not?
[type here]	[type here]	[type here]

Has there been any further analysis of 'Local Development Plans/Annual Investment Plans' or land tenure plans in your district? If 'yes', please describe. If 'No' tick here ☐

Activity, review or study	Summary of key conclusions	Was the work successful? eg were its recommendations carried out? If not, why not?
[type here]	[type here]	[type here]

Has there been any analysis of cumulative environmental impacts in your province? If 'yes', please describe. If 'No' tick here ☐

Activity, review or study	Summary of key conclusions	Was the work successful? eg were its recommendations carried out? If not, why not?
[type here]	[type here]	[type here]

Have any other environmental or social analyses been carried out by other concerned agencies (public or private) in your province? If 'yes', please describe. If 'No' tick here ☐

Activity, review or study	Summary of key conclusions	Was the review successful? eg were its recommendations carried out? If not, why not?
[type here]	[type here]	[type here]

Please describe the activity of the following on environmental and social issues in your province this year

	Activity
Government line agencies working with CBRDP/SILEM on environmental and social issues	[type here]
NGOs in partnership with CBRDP/SILEM to examine environmental and social issues	[type here]
CCTP	[type here]
CVGT/CIVGT	[type here]

Is the project contributing to improved natural resource management in the province?

☐ Yes, it's contributing to an overall improvement

☐ No, it's resulting in environmental degradation/ it's having a negative impact on the environment

☐ Too early to say

Please explain:

[type here]

Policy issues

Are there any policy issues that limit environmental sustainability that require addressing at a national level?

Policy issue	Reforms required
[type here]	[type here]

Training

Please list the training you have received under the CBRDP/SILEM or otherwise	List TWO key areas of training you need in order to carry out your role in the CBRDP/SILEM
[type here]	1) [type here] 2) [type here]

Completed by: [type here]

Name: [type here]

Position: [type here]

Date: [type here]

Format 6.3 *Annual review format to be completed by NRM officer in PCU*

Reporting year: [type here]

Community micro-projects
Please enter numbers of micro-project in the following table (ie insert totals from district reports):

	Approved this year	Screening form on file	Community carried out mitigation without advice	Provincial PCU provided advice on mitigation	Additional technical advice was used
Feeder road improvement/infrastructure					
Water supply infrastructure (boreholes, artesian wells, water storage reservoirs)					
Social and economic infrastructure (schools, health posts, agricultural storage warehouses, etc)					
Soil and water conservation (rock bunds, composting pits, ravine protection, re-vegetation, river and stream bank protection, etc)					
Structural support for improving animal husbandry (grazing land rehabilitation, vaccination parks, improve pasture management, etc)					
Structural support for improving agricultural production (vegetable and multi-purpose gardens, small scale irrigation, agricultural production)					
Structural support for improving forestry (development of natural/artificial forests, nurseries, protection of ecosystems, development of community forests, etc)					
Soil and water conservation/management					
Total					

Sub-projects shared by communities (under the Local Investment Fund component)
Please enter numbers of sub-projects in the following table (ie insert totals from district reports):

	Approved this year	Environmental review form on file	EIA completed
Soil and water conservation			
Reforestation and management			
Water supply infrastructure			
Feeder road improvement/infrastructure			
Total			

Management issues

Summarise, from province level reports, the ways in which Environmental and Social Mitigation Officers have been involved in the targeting or identification of any micro-projects under the CBRDP/SILEM.

[type here]

Please summarise key points concerning the activities of the following on environmental and social issues in the provinces

	Activity
Government line agencies working with CBRDP/SILEM on environmental and social issues	[type here]
NGOs in partnership with CBRDP/SILEM to examine environmental and social issues	[type here]
PRCUs	[type here]
CVGT/CIVGT	[type here]

Results of reviews or assessments

Summarise the key activities in "support to NRM activities and mechanisms":

Examples of types of activities	Typical conclusions	Levels of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Summarise the key activities to develop 'Local Development Plans/Annual Investment Plans' or land tenure plans:

Examples of types of activities	Typical conclusions	Levels of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Summarise key studies to analyse cumulative environmental and/or social impacts:

Examples of studies	Typical conclusions	Levels of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Summarise any other environmental and social analyses been carried out by the the CVGT/CIVGTs:

Examples of studies	Typical conclusions	Levels of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Summarise the results of EIAs, RAPs and other plans from your knowledge and from the provincial reports:

Type of projects that have been subject to assessment:	Typical impacts identified included:	Levels of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Overall conclusions

Is the CBRDP/SILEM contributing to improved natural resource management and community development?

☐ Yes, it's contributing to an overall improvement
☐ No, it's worsening natural resources/it's having a negative impact on the environment
☐ Too early to say

Please explain:

[type here]

Summarise any unforeseen environmental or social problems associated with the project

Problem	Actions taken	Actions to be taken
[type here]	[type here]	[type here]

Policy issues

Please describe the activity of the CBRDP/SILEM in addressing policy constraints that affect environmental sustainability

Policy issue	Reforms required, and actions taken
[type here]	[type here]

Are there further policy issues that limit environmental sustainability that require addressing at a national level? Are these based on experience from the provinces?

Policy issue	Reforms required
[type here]	[type here]

Training requirements

Based on feedback from districts, what are the 3 priority training requirements under the CBRDP/SILEM?

Training requirement	Who for
1) [type here] 2) [type here] 3) [type here]	[type here]

Please make any other comments not adequately described above:

[type here]

Completed by: [type here]

Name: [type here]

Position: [type here]

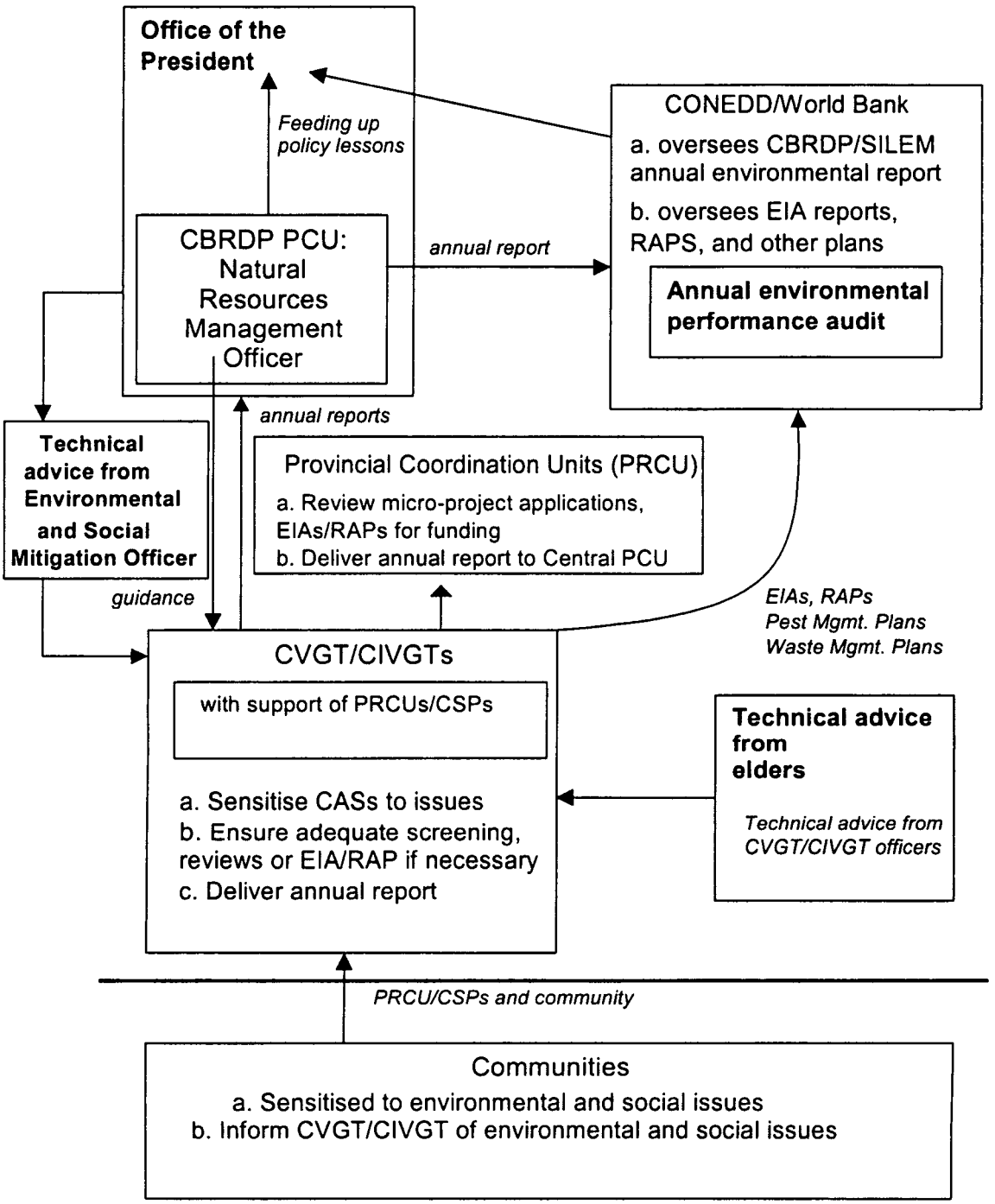
Date: [type here]

6.6 *DESCRIPTION OF ROLES*

Figure 6.7 depicts the roles proposed under the ESMF, and detailed terms of reference are given in the following sections. In summary:

- *Environmental and Social Mitigation Officers* will be responsible for ensuring that the environmental and social screening and review system set out in this chapter is integrated into the micro-project cycle, and is used;
- Sensitisation of CVGT/CIVGTs to environmental and social issues will be a significant part of ensuring this, as will partnerships with governmental and non-governmental officers associated with the CCTPs;
- The *Environmental and Social Mitigation Officers* may need to draw on the technical advice of their governmental colleagues in other departments, or indeed upon traditional technical knowledge, particularly of natural resource management, land tenure practices, and livestock management etc;
- Backstopping technical advice will also be available from the *Environmental and Social Mitigation Officers;*
- Each *Environmental and Social Mitigation Officer* will compile a brief annual report for delivery to the CCTP and to the PCU NRM Officer;
- The NRM Officer in the PCU would provide guidance to the CVGT/CIVGTs (as well as stimulating CCTPs), and provide the key link between provinces and CONED and the Office of the President;
- An annual environmental performance audit will report to the PCU, CONEDD, the World Bank and relevant government officials/agencies.

Figure 6.2 *Institutional roles*



6.6.1 *Terms of reference for the PCU Natural Resources Management Officer*

Terms of reference for the Natural Resources Management Officer will be drawn up based on the following objective and tasks:

Objective

To integrate issues of natural resources and environmental sustainability into the operation of the CBRDP/SILEM, in order to maximise the positive contribution that the project makes to natural resources and environmental sustainability in Burkina Faso.

Tasks

- Establish the system of screening checklists and reporting forms set out in this chapter, and oversee their smooth operation including advice to Provincial Coordination Unit (PRCU) on the procurement of consultants for any required EIA studies, RAPs or safeguard requirements;
- Provide technical advice on issues of natural resources and environmental sustainability in the provinces to Environmental and Social Mitigation Officers and to CVGT/CIVGTs; draw on the use of the full-time Environmental and Social Mitigation Officers as appropriate to carry out this task;
- Champion the development of province-level natural resources management planning, and planning for Local Development Plans;
- Spot issues concerning natural resources management and environment that may require additional assessment, particularly relating to cumulative impact assessment, or any issues that have a transboundary (ie inter-village) nature and take action as appropriate to investigate;
- Identify and investigate specific issues of national policy that affect the operation of the ESMF or limit the attainment of natural resources and environmental sustainability in Burkina Faso, and work with the PCU on advocating areas of reform;
- Manage the implementation of all training and sensitisation programmes to be carried out (as set out in *Chapter 7*);
- Identify suitable consultants to be used on all issues of natural resources and environmental management in relation to any of the above tasks and oversee their procurement and performance;
- Liaise with the Ministry of Environment and Sustainable Livelihoods and CONEDD on a regular basis;
- Provide an annual report using the format in *Format 6.4* to the PCU and CONEDD.

6.6.2 *Terms of reference for Environmental and Social Mitigation Officer*

Objective

To provide technical advice on environmental and social impact management and mitigation, in order to maximise the positive contribution that the project makes to natural resources and environmental sustainability in Burkina Faso.

Tasks

- Provide technical advice to PRCUs on all technical issues related to natural resources and environmental management. These issues will relate to impacts on surface water, groundwater, natural resources and vegetation, sourcing of materials used in construction, human health, ecology and protected areas, land and soil degradation, social welfare, and involuntary resettlement;
- Provide specific technical advice on mitigation measures for micro-projects and inter-community projects;
- Raise awareness and proactively create demand for this technical advice among CVGT/CIVGT officers;
- Lead the delivery of training and sensitisation programmes for PRCU officers and CVGT/CIVGT officers;
- Carry out reviews of completed micro-projects / sub-projects independently with the support of CSPsin order to identify improvements in mitigation measures and the screening checklists;
- Provide technical support to the PCU NRM Officer.

6.6.3 *Terms of reference for an annual performance review*

Objective

To review the performance of the CBRDP/SILEM in integrating natural resources and environmental management and mitigation measures into the operation of the project, and make practical recommendations for improving performance.

Tasks

- Review of the paper trail of screening checklists and EIA reports/RAPs, and review of reports on wider issues of natural resources and environmental management;
- On the basis of this review, select a number of community micro-projects and sub-projects for field visits to investigate compliance with proposed mitigation measures, and identification of potential impacts that are not being adequately identified or dealt with by CSPs , communities or Environmental and Social Mitigation Officers;
- Recommend practical improvements to the ESMF screening checklists in order to fine-tune the operation of the ESMF based on practical experience;

- Discuss CBRDP/SILEM activities in natural resources management planning with PCU NRM Officer and Environmental and Social Mitigation Officers;
- Recommend additional assessment studies to be carried out to complement development of the project's approach to natural resources and environmental management.

Outputs

A report of the annual performance review delivered to the Central PCU, the GoBF and the World Bank, setting out:

- Summary of the numbers of micro-projects and inter-village projects (i) carried out, (ii) screened for environmental and social impacts, (iii) provided with technical advice from PRCU Environmental and Social Mitigation Officers, (iv) assessed with a full EIA, RAP etc;
- Description of the actual operation of the ESMF as it has occurred in practice;
- Identification of environmental and social risks that are not being fully addressed or mitigated;
- Conclusions on whether the project is maximising its positive contribution to natural resources and environmental management;
- Areas for improvement and practical recommendations.

6.7 *MONITORING AND EVALUATION*

There are two opportunities be taken to build a simple system for the monitoring and evaluation of environmental and social impacts:

- The PCU NRM officer should consider the environmental and social criteria that require measurement (eg groundwater levels etc); A list of initial proposals is given below;

- Using this list of criteria, a set of indicators can be integrated into the recording forms used in the early warning systems in each district; (this will ensure flexibility between districts, as well as a participatory approach to environmental monitoring).

6.7.1 *Initial proposals*

The key issues to be considered in the CBRDP/SILEM include monitoring of water quality, biodiversity indicators, agricultural production, income generation, health and population influx. The goals of monitoring are to measure the success rate of the project, determine whether interventions have resulted in dealing with negative impacts, whether further interventions are needed or monitoring is to be extended in some areas. Monitoring indicators will be very much dependent on specific project contexts.

Monitoring and surveillance of CBRDP/SILEM micro-projects will take place on a "spot check" basis at it would be impossible to monitor all the micro-projects to be financed under the project. The spot checks consist of controlling the establishment of mitigation measures. It is not recommended to collect large amounts of data, but rather to base monitoring on observations by project technicians and stakeholders to determine the trends in indicators.

Monitoring of participation process

The following are indicators for monitoring of the participation process involved in the CBRDP/SILEM activities.

- Number and percentage of affected households consulted during the planning stage;
- Levels of decision-making of affected people;
- Level of understanding of project impacts and mitigation;
- Effectiveness of local authorities to make decisions;
- Frequency and quality of public meetings;
- Degree of involvement of women or disadvantaged groups in discussions.

Monitoring of implementation of mitigation plans

Tables 6.3 and *6.4* lists the recommended indicators for monitoring the implementation of mitigation plans.

Evaluation of Results

The evaluation of results of environmental mitigation can be carried out by comparing baseline data collected in the planning phases with targets and post-project situations.

Table 6.3 Possible indicators for environmental monitoring of CBRDP/SILEM

Environmental Indicator	Target
AIR QUALITY	
Ambient air quality standards	Non-violation of international standards
Visibility	Visibility not hampered
Ambient Noise levels	Acceptable noise levels by international standards
RIVER FLOW	
River flow speed	Unaltered or minor alterations in river flow
River flow pattern	No or little change in river flow patterns
Velocity in reservoirs	Unaffected velocity or minor changes in velocity in reservoirs
WATER RESOURCES	
Salinisation level	National standards

Environmental Indicator	Target
Pollution level	Clean water supply
Siltation of water bodies	No or limited temporary siltation
Water transparency	Transparent/clear water
Erosion load	No or limited temporary erosion load
Sedimentation load	No or limited temporary sedimentation load
Microbial counts in water	Low microbial counts in water
Level of water table	Maintenance of high water table
Volume of surface water	Abundant water supply
SOIL CONDITION	
Soil erosion incidence	Low rate of or no soil erosion incidence rate
Soil compaction	No soil compaction
Oil spillage	Controlled oil handling
VEGETATION	
Deforestation/de-vegetation rate	Conservation awareness and de-vegetation/re-afforestation
Changes in species composition	Maintenance of species composition
WILDLIFE	Protection of natural habitats
Disruption of natural habitats	Maintenance of species composition
Changes in species composition	Protection of endangered species
Endangered species	Prevention of loss in biodiversity
Biodiversity	Ecological restoration
Ecological balance	
AESTHETIC QUALITY	
Changes in natural terrain	Unaltered natural terrain

Table 6. 4 Possible indicators for social monitoring of CBRDP/SILEM

Social Indicator	Target
Village access to roads	Roads maintained or improved
Consumer price index	Stable
Real GNP per capita	Exceed national average
Calorie intake	Based on WHO standards
Headcount index	Reduction of poverty and food poverty lines
HIV incidence	Based on health reports/no increase in HIV incidence
Health indicators	Increase/decrease in diseases prevalent in the area
Education indicators	Based on increase/decrease in literacy rates
Migration	Migration of unaccompanied children stabilizes
Land tenure access	Access to land is secure for all people
Poverty gap index	No increase in poverty gap
Cultural heritage	No loss of cultural heritage site or full replace of sites
INCOME GENERATION	
Amount and number of small enterprise loans disbursed/repaid	Possible increase depending on demand and local economy
Number of small enterprises	Increase during construction in project area
Number of skilled labourers	Increase during construction in project area
Unemployment	Decrease during construction in project area
Number of unskilled wage earners	Increase during construction through employment of local labour
Number of skilled wage earners	Increase during construction through employment of local labour
Unskilled rural wage	Increase in average wages due to increase in demand during construction and maintanence
Skilled rural wage	Increase in average wages due to increase in demand during construction and maintanence
Credit and Savings groups established	Establishment of groups in project area

7 CAPACITY-BUILDING AND TRAINING REQUIREMENTS

In order to ensure proper implementation of environmental and social screening and mitigation measures, as well as effective natural resource management, the CBRDP/SILEM will undertake an intensive program of environmental training and institutional capacity building. This will build on previous efforts made during Phase I of the program.

7.1 ENVIRONMENTAL TRAINING AND SENSITISATION

Training and sensitisation will be required at the levels of CCTPs, Environmental and Social Mitigation Officers, CVGT/CIVGT, and Community workers. The PCU NRM Officer, Environmental and Social Mitigation Officers and additional experts will provide experts to deliver a range of technical training on environmental issues to these groups. *Table 7.1* sets out the specific training requirements of each of these levels. The objective of this training is to build the capacity in these groups for implementation of the ESMF to be supported under the project.

For each group, training will be provided to bring them to a different level of expertise in different areas (refer to *Table 7.1*):

- In -depth training to a level that allows trainees to go on to train others, including technical procedures where relevant;
- Sensitisation, in which the trainees become familiar with the issues to a sufficient extent that it allows them to demand their precise requirements for further technical assistance; and
- Awareness-raising in which the participants acknowledge the significance or relevance of the issues, but are not required to have technical or in-depth knowledge of the issues.

Table7.1 ***Training and sensitisation requirements***

	PRCUs	Environmental & Social Mitigation Officers	Contract Service Providers	Community workers*
Links between natural resource management, HIV/AIDS and disease prevention, and land tenure	S	T	A	A
Potential cumulative impacts	S	T	A	A
Potential localised impacts of micro-projects and suitable mitigation measures	S	T	T	S
Use of the ESMF (screening forms)	S	T	S	-
Potential environmentally positive micro-projects	A	A	T	S
EIA law, relevant environmental policies & CBRDP/SILEM approach to policy reform and enforcement	S	T	A	A
Inter-village and inter-provinces lesson-learning and review	-	T	-	-

* CAS members., Community (and Animal) Health Workers, Teachers, Elders, Women groups, etc.
** T = detailed training, S = sensitisation to the issues, A = raised awareness.

The details of the training to be carried out are set out in *Table 7.2*. Programs will also include training trainers for extension services to the communities and providing refresher courses from time to time in all of the topics identified.

As part of the *Local Capacity Building* component, the CBRDP/SILEM will also provide basic training and support awareness raising for local community representatives and interested members of the project communities. The objective of the awareness training is to mobilise the interest and participation of villages, existing local-level institutions, and traditional authorities to organise themselves at the level of villages, and inter-villages. The training programs aim to build capacity within CVGT/CIVGTs and the CASs to successfully plan, implement and maintain village level investments.

An example of an agenda for proposed training focused on environmental and social issues is given in *Box 7.1*.

The objective of this training is to raise the level of environmental awareness in the communities, promote adoption of the screening checklist by literate community members, and raise awareness that the CBRDP/SILEM can finance environmental micro-projects should the community choose these. The training will also build support for the screening and mitigation process, which originates at the community level.

Table 7.2 ***Proposed environmental training and sensitisation program***

Intended Audience	*Training Component*	*Input (days)*	*Frequency*
PCU staff PRCU staff	• Operation of the ESMF: screening, mitigation and environmental assessment triggers • Awareness of Burkina Faso and World Bank environmental safeguards • Approaches to Environmental impact assessment • Strategic and cumulative issues of natural resources management	2 day workshop	In Year 1 of the project
CCTPs PRCU staff	• Sensitisation to the Operation of the EMF: screening, mitigation and environmental assessment triggers • Sensitisation to natural resources management and environmental issues the provinces	1 day workshop for every DSG	In years 1, 2 4 and 6
Environmental and Social Mitigation Officers	• Operation of the EMF: screening, mitigation and environmental assessment triggers • Good practices and mitigation measures • GoBF environmental law • Good practice in EIA	Long-term training programme	1-week training programme, four times annually, through years 1-3
	• Inter-village learning / sharing of experience	2 day meeting	In years 2, 4 and 6
Contract Service Providers	• Use of the community micro-project screening checklist, and operation of the ESMF • Sensitisation to natural resources management and environmental issues in the provinces	2 day workshop in year 1, 1 day refreshers in years 3 and 5	Years 1, 3 and 5
Community workers*	• Use of the screening checklist • Mitigation measures for micro-projects • Ideas for environmental projects	2 day per community	Throughout the project

* CAS members, Community (and Animal) Health Workers, Teachers, Elders, Women groups, etc.

The training and sensitisation program recommended above will be supported by the *Technical Support to Community Organisations* sub-component. This sub-component aims to provide to the CGVT and the CAS technical backup for carrying out their annual investment plans. The support will be provided by the provincial teams and delegated to third parties (Contract Service Providers, NGOs or government technical services) when necessary.

7.2 *RECOMMENDATIONS FOR CAPACITY BUILDING*

At present, capacity to implement these recommendations is low, with few qualified staff in the existing CVGT/CIVGTs and PRCUs. Where staff exists, training in the application of environmental and social screening is needed. In addition, it will be necessary to appoint *Environmental and Social Mitigation Officers* in the PRCUs, and to build awareness and knowledge in environmental and social screening amongst the decentralized levels of administration.

The CBRDP/SILEM will address these deficiencies in accordance with investment for capacity-building across the regional, provincial and inter-village administrations. Where gaps exist in terms of staff availability or qualified staff at each level of project implementation (national, provincial and community), measures will be taken throughout the project life cycle to hire skilled personnel and train staff.

Figure 7.1 Typical agenda for a 2-day workshop on ESMF's Screening and Review Process

Day 1

(a) *Introduction to Environmental Impact Assessment*

This section will introduce participants to the theory and application of EIA as a decision making tool. It will outline the principles of EIA and provide clear definitions on EIA practice terminology (e.g. screening and scoping, impacts [negative, positive, cumulative, strategic] natural resource base (water, soil, land, biodiversity, air, etc., mitigation and monitoring). Social issues as they should be mainstreamed into the EA process will also be discussed.

(b) *World Bank Safeguard Policies and Legislation of Burkina Faso*

This section will discuss the principle World Bank safeguard policies and their application to subprojects under the CBRDP/SILEM. Each policy will be discussed in detail. In addition, the applicable Burkina Faso legislation will be discussed in terms of the relevant environmental laws and policies, land tenure, and community planning which apply to activities under the program.

(c) *Screening and Scoping of Sub-projects*

A list of potential activities to be financed under the Local Investment Fund will be discussed. Application of the screening checklist (formats in Chapter 6) for community investments and the scoping checklist for inter-village investments will be explained using case studies.

Day 2

(d) *Impact Identification*

Potential impacts related to various types of activities will be discussed, in terms of their significance (adverse or minimal, positive or negative), magnitude (long term versus short term), and impact category (localised or cumulative). Types of social and environmental impacts will be explained. Triggers for identifying impact types as set out in Chapter 6 will also be explained.

(e) *Mitigation and Monitoring*

Mitigation measures as they apply to various types of investments will be discussed, in terms of their application, cost and feasibility. Monitoring measures will also be recommended to measure the effectiveness of mitigation plans and to monitor performance.

(d) *Responsibilities for Planning and Reporting*

For each target audience, responsibilities for environmental management, EIA planning and resettlement planning will be discussed as they relate to the CBRDP/SILEM implementation. This will include responsibilities for planning, management of impact identification and mitigation/monitoring, partnerships with NGOs and technical service providers, partnerships among community members, and reporting.

8 ESTIMATED COSTS

The breakdown of estimated costs in for putting the ESMF into operation is provided in *Table 8.1*. This includes the costs of providing the training set out in *Chapter 7*.

8.1 COSTS FOR ENVIRONMENTAL AND SOCIAL INPUTS

The total estimated costs for mainstreaming environmental and social concerns over an indicative period of six years into the CBRDP/SILEM is USD 1,370,000. Some of these costs may be already covered under the existing budget of the Project. However, most of the proposed budget lines are separately identified in the project budget (particularly relating to training and impacts assessments): this will ensure that the ESMF has significant 'clout' within the operation of the project, and is not sidelined.

A specific responsibility of the PCU NRM Officer will be to report on expenditure within the project that can be explicitly related to mainstreaming of safeguard concerns. This will be one way of monitoring the extent that environmental and social issues are being addressed.

8.2 MAINSTREAM COSTS

Some costs of environmental management and impact mitigation are directly integrated into the main project budget. Specifically these are:

- Costs related to mitigation measures for micro-projects, which will be assessed and internalised as part of the overall micro-project cost;
- Costs related to mitigation measures for inter-village projects, which will be assessed and internalised as part of the overall micro-project cost;
- Cost of studies related to strategic issues of natural resources management, which are internalised into the sub-component of the SILEM's *Local Investment Fund.*

8.3 COSTS OF TRAINING

Again, the total estimated cost for expenses associated with training and sensitisation, is included in *Table 8.1*. This estimate does not include the cost of recruiting any new PRCU Environmental and Social Mitigation Officers, who will be the lead facilitators of training program in each province. It is assumed that existing PRCU staff may be suitable candidates for these positions.

		Activity	USD					Total	Note
			Year 1	Year 2	Year 3	Year 4	Year 5		
COMPONENT 1: SUPPRT TO CBRDP (PNGT 2)									
Sub-Component 1.1	Support to CBRDP (PNGT 2) Implementation	Training of PRCU (19 Teams- 26 Provinces)	50000		25000		25000	100000	Training to be provided by international specialist and PCU staff, cost in Y1 covers expenses and manual preparation. Training in ESMF/screening operation. 2 day workshop in Y1, followed up by 1 day refreshers in Y3 and Y5.
Sub-Component 1.2	Capcity-building for backstopping services (CCTP)	Training of Provincial environmental/forestry/agricultural officers involved in CCTP (ESMF/EIA/stategic issues)	30000	10000	10000	10000	10000	70000	Training can be implemented by PCU/PRCU staff during regular 3 -month CCTP meetings on a rotational basis. Y1 includes cost of manual preparation.
COMPONENT 2: SUPPORT TO LOCAL DEVELOPMENT (CVGT/CIVGT)									
Sub-Component 2.1	Support to Contract Service Providers, CVGT/CIVGT in sub-project screening, monitoring and evaluation	Training of CVGT/CIVGT officers (CAS groups)	150,000	100000	100,000	100000	100,000	550000	Training to be provided by international specialist and PRCU staff. Figure in Y1 to cover expenses and manual preparation. This is mainly training in ESMF/screening operation at local level. Covers all provinces and CP units.
Sub-component 2.2	Policy, Advocacy and Research	Policy studies to identify areas of advocacy related to environment and social issues.	20,000	20,000	20,000	20,000	20,000	100000	Provision to carry out two policy studies on issues related to environmental and social policies and advocacy per year.
Sub-component 2.3	Local services development	Provision for EA studies of specific sub-projects	100,000	100,000	100,000	100,000	100,000	500000	Provision for conducting necessary EA's of relevant sub-projects. Figure based on average of 50 EA's/yr at 2000USD per study in all provinces
COMPONENT 3: SUPPORT SPECIFIC TO SILEM PROGRAM									
Sub-Component 3.1	Natural Resource Management Planning (w/in context of Integrated Ecosystem Management -GIE)	Development of plans within SILEM zones of intervention/selected villages (in addition to PGT)	10,000	10000	10,000	10000	10,000	50000	Plans to be developed by PCU and PRCU staff for each SILEM zone of intervention (approx 20 villages involved per year)
		Review/impact assessment of NRM plans including cummulative impacts						0	To be nndertaken by PCU M&E Unit and costs assumed already covered in M&E budget.
Sub-Component 3.2	Support to SILEM implementaion	Additional training of PRCU Staff in SILEM zones	25,000		15,000		15,000		Can be integrated with Sub-Component 1.1 for those zones/villages where SILEM will operate
		Totals	**385,000**	**240,000**	**280,000**	**240,000**	**280,000**	**1,370,000**	

Annex 1

Authors of ESMF Study

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Annex 2

Itinerary of Field Visits

Dates	*Itinaire*	*Nuit*
Mars 21/22 (Ven - Sam)	Kouritenga - Rendez-vous avec Dominique Zongo sur le terrain	Ouaga
Mars 23 (Dim)	Ouaga	Ouaga
Mars 24 (Lun)	Ouaga - Bobo Dioulasso (PM)	Bobo
Mars 25 (Mar)	Visite terrain	Bobo
Mars 26 (Mer)	Visite terrain - Ouaga	Ouaga
Mars 27 (Jeu)	Ouaga - Kongoussi -Djibo	Djibo
Mars 28 (Ven)	Visite terrain, Djibo - Dori	Dori
Mars 29 (Sam)	Visite terrain, Dori - Ouaga	Ouaga
Mars 30 (Dim)	Ouaga - Bogandé	Bogandé
Mars 31 (Lun)	Visite terrain, Bogandé - Ouaga	Ouaga

Paritcipants:

Kurt Lonsway - chef de l'equipe ERM et environnementalist
Rachel Cardone - socio-économiste ERM
Dominque Zongo - responsible SILEM - PNGT 2

Annex 3

Stakeholders consulted

METHODOLOGY

The first stage in this study involved a desk-based analysis of the project appraisal document (PAD) for the CBRDP (also referred to as PNGT 2), the draft PAD for the SILEM Program and associated papers and reports. This was carried out immediately prior to departure for Burkina Faso and during the first week after arrival in country (14-21 March 2003). The World Bank and the CBRDP Coordination Unit provided most of the documents. Others important sources of information were identified based on recommendations received during meetings with government stakeholders. The list of reports and documents reviewed is provided in *Annex 4*.

Stakeholder interviews in Ouagadougou and in several of the PNGT 2 Provinces

The second stage involved carrying out stakeholder interviews in country and making field trips to several of the provinces where CBRDP is already operating, and to areas that may be targeted for financing of SILEM activities and support. The ESMF team conducted a series of visits with stakeholders and key informants in Ouagadougou, Kouritenga Province (Koupela), Houet/Tuy Province (Bobo Dioulasso), Soum Province (Djibo), and Gnagna Province (Bogandé).

Stakeholder consultation

Stakeholder consultation was one of the key tools to achieve the ESMF objectives. The ESMF team had an opportunity to visit representative areas where the earlier PNGT1 pilot project (1992-1998) and other agencies and NGOs have conducted rural development activities in the past. The team was also shown areas where CBRDP is already present and will conduct new activities, and areas where potential intervention by the SILEM program may be possible. An intensive schedule of interviews with key stakeholders and informants, especially in representative villages at the provincial level, was followed. A typical agenda of a meeting would include an introduction of the ESMF team, and introduction of participants/consultees, a brief overview of the project (both CBRDP and SILEM), views and comments of the consultees, and specific questions from the ESMF team regarding their priorities and strategies for development, details of environmental and social sensitivities, individual and community interaction with the environment, and potential impacts of the project.

Key stakeholders consulted on the project included:

- Ministry officials, and other relevant agencies present in Ouagadougou;
- Provincial Ministry representatives;
- Community administrations and organisations (CVGT, CIVGT, CAS, etc.);
- Community members in each of the villages visited; and,
- International development agencies, and staff of agency-funded projects.

A detailed table of those consulted and a brief synthesis of discussion points follows.

1.2 Field visits

Four separate field visits to representative provinces of Kouritenga, Houet/Tuy, Soum and Gnagna were carried out over a period of about ten days in March 2003. The objective of the visits was to meet and consult with provincial CBRDP teams, governments, and agencies, as well as with potential participant communities, and to learn as much as possible about CBRDP activities and issues, potential activities and issues of the proposed SILEM program. Importantly, the field work served to verify our initial analysis of potential environmental and social impacts of the overall Project.

1.3 Wrap-up and completion

Periodic debriefing sessions were held with the CBRDP Coordination Unit in Ouagadougou throughout the mission. A final debriefing was scheduled for 2 April, 2003 before the ESMF team departed, to present and discuss preliminary findings based on recent fieldwork. Unfortunately this debriefing did not take place, as the CBRDP Coordination Unit was wholly preoccupied with a World Bank supervision mission and were absent from Ouagadougou. However, after comments are received and incorporated from stakeholders and ASPEN on a draft of this report, a final debriefing could be envisioned to present and discuss the final report.

1.4 Stakeholders consulted

Ouagadougou

Government
Programme National de Gestion des Terroirs (PNGT2)
Jean-Paul Sawadogo: Coordonnateur National
Pascal Ilboudo: Responsable Service Appui Technique
Dominque Zongo: Responsable du Programme SILEM
Brahima Traoré: Responsable Volet Formation

- Discussion on objectives of mission, administrative and contractual issues. Suggestions on who to meet within Government. Planning for field visits. Periodic debriefings on progress of mission (see below).

Ministère de l'Environnement et du Cadre de Vie
Jean Baptiste Kambou: Ingénieur Forestier, Conseiller Technique

- Mr. Kambou is the GEF focal point for Burkina Faso. He ensures that all projects conform to environmental requirements and GEF policies (e.g. ensured synergy between PNGT and PAGEN where zones of intervention are very clear).

- SILEM Program was first presented at a GEF workshop in April 2000. There is a need to ensure participative conservation on projects around protected areas.
- The Cadre de Concertation Techique Provincial (about 40 participants) meets every three months at a provincial level and is seen as an effective venue for the ministry to review proposed PNGT 2-funded projects. PNGT 1 experienced problems of socio-economic nature, in that it did not take into consideration the true priorities of population. PNGT 2 has attempted to address these constraints.
- Bureau de Suivi des ONG (BSONG - Bureau for monitoring NGOs) is responsible for monitoring NGOs such as Naturama working in the Kaboré-Tembi National Park, ANPF in the Vallé d Sourou, ANAR associated with IUCN, etc.).

Honoré Toé: Directeur Général de l'Environnement (DEP)
Jean Lingiani: Directeur des Evaluations Environnementales (DGE)

- EA Guidelines were drafted in 2001, classifies projects according to size and category (e.g. Cat. A, B, C).
- Département des Etudes et de la Planification (Department of Studies and Planning) responsible for reviewing and approving all donor-funded projects and to ensure that environmental concerns and issues are addressed.
- Ministry of Environment participates in PNGT 2 meetings, and receives training support (e.g. Cadre de Concertation Technique Provincial - which is perceived as being effective due to participatory nature).
- Suggests that the following reports be obtained and consulted:

1. Rapport de létat de l'environnement au Burkina Faso (2002)
2. Plan d'environnement pour un développement durable (2002)
3. Programme national de plan d'action contre la desertification (took three years to develop, many organizations were involved in drafting this document).

- PNGT 1 had heavy focus on forestry development, established forest teams in 13 provinces.

Conseil National de l'Environnement et du Développement Durable (CONEDD)
Sambou Coulibaly: Secretaire Permanent
Mamadou Honadia: Chargé de Convention Changement Climatique

- CONEDD is divided into three branches:

1. Conferences
2. Permanent Secretariat
3. Special Commissions (e.g Natural Resources, Environmental Education, etc.)

- Government is placing environmental cells or units at the department level within various ministries, CONEDD is responsible for coordination. Twelve are planned, although only four a functioning (i.e Ministère de l'Education de Base, Ministère de l'Education Superieur, Ministère de l'Agriculture, and Ministère des Mines et Energie). There are 31 total ministries in Burkina Faso.

- INERA is already working in certain areas of the country on wetland development, especially in the West and Southwest. INERA received FAO support undertake a five-year study. Program was recently completed.
- Suggestions that the SILEM project will work in other zones, especially toward the North but can use experience of INERA.
- Explanation of Government national implementation strategy/action plan for the following three conventions:
  1. Climate Change
  2. Biodiversity
  3. Desertification
- Discussion on National Environmental Action Plan (NEAP) completed in 1991 which included frameworks in:
  1. "Gestion Terroirs" (PNGT)
  2. Amenagement Patrimoine (sp) Nationaux
  3. Amélioration du Cadre de Vie

  NEAP was revised to include the international conventions (see above) in 1994. A second revision is presently underway but still in draft.
- After a conference convened by CONAGESE in 2002, the decision to restructure was made and CONAGESE's name changed to CONEDD. New organization will focus on environment, economic and social issues with an overall objective of sustainable development. CONEDD provides advice to various Government Ministries and has a 5 year mandate to execute their given tasks above.
- Ministry of Environment and Water has changed to Ministry of Environment and Livelihoods ("Cadre de Vie"). Primary departments are:
  1. General Direction of the Environment
  2. Livelihoods ("Cadre de Vie")
  3. Water and Forests
- Uses UNDP poverty indicators to measure progress toward meeting objectives; these are examined by National Program for Management of Information (PNGIM).

International development agencies

World Bank

Emmanuel Nikiema: Natural Resource Management Specialist, World Bank
Jean-Michel Pavy: Ecologist and Natural Resource Management Specialist, World Bank

Kouritenga Province

Provincial Office PNGT2 :

Yaméogo Flore : Coordination Provinciale du Kouritenga, Economiste

- Plan to work in 221 villages, 9 departments. Presently working in 105 villages:

- Established CVGTs (Comité Villageois de Gestion Terroir). CVGTs are usually different from traditional or tribal systems but can be led by same hierarchy. CVGTs have sub-committees such as livestock, agriculture, land tenure (necessary) and foresty/environment. Varies from one village to another based on need.
- Developed PGTs (Plan de Gestion Terroir - Village Development Plans) for five years.
- Micro projects include : soil restoration ; wells, schools, local language training centers, health centers, transportation infrastructure (e.g. raiders-concrete or stone crossing structures across stream beds)
- Move toward communal system under consideration. Only two exist at the moment in Ouagadougou for municipal areas. Rural communes would allow grouping of villages and believed would facilitate delivery of services
- Brief discussion on composition of team, development of village development plans (Plan de Gestion Terroir Villageois), capacity building and micro projects supported under PNGT 2.

Village: Dapelogo, Quartier de Ganboulin
Responsables du Groupement Gestion du Bas Fond (CAS)
Dima Karim : Président
Dima Sylvain : Sécrétaire
Dima Jean-Paul : Trésorier
Groupement Gestion du Bas Fond

- Visited functioning literacy training center (CPAF). CPAF provides training in local language, and is attended by both men and women of varying ages.

- Visited lowland (bas fond) developed for rice cultivation on 7 hectares financed by PNGT 1. Area was divided up into 0.25 ha parcels and is cultivated by 40 families. Yields are estimated at about two metric tons per ha. Water levels in fields are controlled by two low concrete structures with a single slide gate in the middle. Seeking funding to construct an additional dike to bring additional area under cultivation.
- Discussed social and economic issues faced by people living above and below the low concrete structures, with regards to access to water during wet and dry season.
- Shown upstream area where erosion and sedimentation seems to be a problem. Villagers themselves have attempted to address problems by placing stones but incoming water velocities too high and problem persists. Suggests need to investigate and establish viable upstream protection measures.
- Discussed the participatory processes by which the training center and the low concrete structure were agreed upon for micro-investments.

Village: Dakosin

Responsables du Groupement Gestion du Forage (CAS)
Guigri Dayamba: Président
Benjamin Yougboué : Sécrétaire
Denis Noba : Trésorier
Groupement du Forage

- Visited functioning borehole (forage) equipped with mechanical hand pump. Clean water was first priority of the village.
- Village now seeks funds for rock bunds/tied ridges (cordons pierreux) for land restoration and a storage structure for grain.
- Village numbers about 500 inhabitants, has functioning CVGT (with 36 members participating in general assembly). The bureau or office is composed of 11 men and four women. There is also a land tenure committee (Comité de Foncier) composed of four persons, including the traditional village chief who is aware of land tenure issues.
- Discussed system of compensation for land used for the projects; no compensation was given, and the owner of the land claimed he was honored to donate land for his community. The land was not previously used for agricultural purposes, nor was it used for housing.
- Discussed socio-economic pressures on the growing community due to lack of water.

Houet/Tuy Province (Bobo Dioulasso)

Government
Cdt. Golane Pierre : Inspecteur des Eaux et Forêts, Directeur Provincial, Direction Régionale de l'Environnement et des Eaux et Forêts des Hauts-Bassins

- Responsible for three provinces for forest management, wildlife management, and fisheries.
- Forestry responsibilities include forest management training and regulatory enforcement.
- Wildlife responsibilities include wildlife conservation management, hunting regulations and anti-poaching.
- Fishery production activities are managed by Ministry of Agriculture but training and enforcement is responsibility of the Regional Direction of Environment.
- Livelihoods (Cadre de Vie) include working for the municipality of Bobo Dioulasso on environment issues (e.g. pollution, sanitation and waste management, etc.) and managing green spaces.
- Primary constraints are lack of personnel and means to cover 13 departments in 3 provinces (e.g. 9 staff cover all departments, which is equivalent to 36 villages per person. Villages do not necessarily follow training recommendations so enforcement is necessary. Desired strategy is to involve population from start, provide good training and get to assist with enforcement.

- Several government codes are too general and require development of more applied guidelines. Some codes are contradictory and issues need to be resolved (e.g. exploring for minerals in a classified forest).
- CCTP is an effective means for government agency participation. Choice of PNGT 2 villages is presented and made here.
- Other projects working in the area include: PDRI (Projet de Développement Rural Integré - funded by AFD); Protection des Berges - funded by CILSS.
- Areas where SILEM could concentrate are: revegetation of denuded areas for livestock use; agriculture, environment (better overall land management); improved communication methods to help resolve specific problems.

Sangaré Abdoulaye : DPAHRH du Houet

- Responsible for rural water supply (boreholes and wells). Program to drill in 200 boreholes in 2003. Require about 750 to meet present needs.
- Well are mostly established for livestock purposes. Program to develop 12 in 2003.
- Other small wells need for small-scale irrigation (vegetable gardens). Installed four boreholes on 50 ha for irrigation to provide for dry season cultivation but people not used to this and require assistance.
- Only one dam project under consideration at the moment. Project a feasibility stage. Contractor is responsible for conducting studies, including environmental assessment (EA).
- Expressed a desire that CCTP become more directly involved in following up on implemented activities (e.g. PNGT 1 funded construction of small dam but downstream irrigation never developed as planned).

Provincial Office PNGT2 :
Bondé Bagnamou: Coordonateur Provincial
Traoré Amélie : Chargée de Communication
Noula Kouna : Chargé de l'Education Environnementale
Sama André : Chargé du Suivi-Evaluation

- Introduction to local team and brief discussion of mission objectives and provincial activities.
- Constraints are inability of team to follow up directly with villages due to small team size and large coverage area. Desire capacity to follow up on private contractors selected to work with villages to develop village development plans (PGT).
- Want PNGT 2 to reconsider decision not to directly fund income generation activities (e.g. grinding mills).
- Social considerations are made through the community development plan; there is variation in the quality of participatory assessment and strategic development based on the quality of the contractor.

Village : Balla – Mare aux Hippotames, Reserve de Balla
Responsables du Groupement de Pécheurs à Balla
Millogo Sebastian :Président
Ouattara Dié : Secretaire
Millogo Philibert : Président Adjoint
Ouatta Abidias : Trésorier Adjoint
Groupement de Balla
Groupment de Soukourani
Millogo Jahany : Président
Millogo Souro : Trésorier
Millogo Dibi Aimé : Organisateur
Groupement de Tiarako

Blagna Zongo : SIDECV/Satoro (Guard)

- Introduction to group's fishing activities and visit to the wetland.
- Group has received training in sustainable fishing techniques from GTZ. Project is coming to a close.
- Fishermen understand the need to closely manage fish off take, especially during dry years when wetland lake is not connected to major river. However, population growth and pressure makes this difficult.
- Economic situation of the area is diverse and has changed in recent years such that agriculture is needed to sustain families (in addition to fishing).

Village : Kadomba
UGCF/Maro (Forestry Management Union)
Millogo Philibert : Président
Millogo Valentin
Millogo Wiayagassoro
Millogo Sain Martin
Millogo Mollo Driosa
Millogo Madou : Animateur UGCF
Traoré Madou

- Visited area (approximately 20 ha) set aside for reforestation and for local vegetation (grasses) seed production (approximately 2 ha). Unfortunately, production has failed for the past two years due to a problem with birds, and inability of local population to maintain effective guard during the planting/harvest season. Seeking additional funding to continue and improve.
- Visited woodlot (approximately 50 ha) placed with a classified forest (forêt classé). Managed by group of 306 people of which 224 are women. Participants receive 1,700 fCFA per taire (1 meter square) for firewood of which about 1,000

fCFA is revenue. Bobo Dioulasso has requested 30,000 taires this year. Regeneration is becoming a problem and the group is seeking funding to replant.

- Participation in the classified forest scheme was done on a first-come, first-served basis such that the poor were not necessarily targeted to join. Notably, participants in the scheme are able to pocket a percentage of the revenues for their own use.
- Visited newly constructed UCGF center funded by 100 fCFA tax collected from each taire sold from 20 villages participating in union. Two buildings - one for forest management bureau (elected) and the other for training.

Village : Bekuy
Comité de Gestion du Puis Pastoral
Tall Sayouba : Chef du Camp Peuhl
Tall Sambo : Président du Comité de Gestion
Diallo Boukary : Vice Président
Groupements et Village de Bekuy

Souleymane Traoré : Direction Régionale de l'Environnement et du Cadre de Vie des Hauts-Bassins

- Village of migrants (peuhl) started 30 years ago. Most migrants came from North (Ouahiyagouya area) due to the severe drought in the mid 1970s. The village is predominantly Muslim.
- Worked previously with PNGT 1 to organize and prioritize problems (e.g. water well for livestock, forage production and training, livestock management).
- Livestock well operating and villagers were consulted on well placement. Tried to avoid putting this in an occupied field. PNGT 1 contributed two-thirds towards cost and villagers one-third in form of construction material and labor.
- Village has about 30 households, 3,000 head of cattle and 500 goats and sheep. Villagers indicated that the well is mostly adequate for needs.
- Discussed land tenure (historic and present) formalities for obtaining land from native village (autotchone) who are primarily animists/Christians. Tradition is to present a gift (e.g. chicken) when requesting land and provide a symbolic gift of grain (e.g. millet) each year after harvest.
- Discussed social and economic constraints of a growing migrant village in a agricultural area. New migrants are having a difficult time obtaining access to resources and land.
- Discussed how the community addresses conflict with regards to access to natural resources, and religion. Traditionally, the chiefs of each group meet and if they cannot resolve their differences an arbitrator is used.

Village : Ramatoulaye
El Hadj Raogo Rasmané : Chef de Village
Ouédraogo Ali : Délégue

Tinto Madi : Président de la CVGT
Groupements et Village de Ramatoulaye

- Village has about 300 inhabitants and has been in existence about 34 years. Requested permission from native village of Kadomba for land.
- Primary activities are agriculture, livestock and sylvo-culture (forestry).
- 10 families migrated from Côte d'Ivoire and others from North (Yatenga).
- First arrivals paid for land with a sheep, land is now limited and increasingly difficult to find and request. Villagers provide symbolic gift of grain to Kadomba each year after harvest. Number of new arrivals is declining.
- Village has developed 5 year Village Development Plan (PGT). Priorities are:

1. Reverse land degradation –establish rock bunds (cordons pierreux).
2. Improve soil fertility – use organic fertilizer
3. Reforestation
4. Water – village only has one borehole and pump.

- PNGT 1 supported the establishment of a small vegetable garden with a well but elephant intrusion has been a problem.
- Villages has multiple special committees (CAS) such as:

1. GGF – Forest Management Group
2. GVF – Village Women's Group
3. GPC (2) – Cotton Producers Group
4. GVE – Livestock Management Group
5. Conseil au GGF (small group of village elders that provide advice)
6. APA – Association for the Promotion of Literacy

- Within GGF they have several subgroups for: commercial firewood harvesting, bush fire protection, reforestation, deforestation protection, etc.
- Primary issues from men's standpoint are to address insufficient potable water, health center (nearest is 18 km from village), grain and supply storage.
- Primary issues from women's standpoint are establishing a village grain mill and a dispensary/maternity.

Soum Province (Djibo)

Government

Provincial Office PNGT2 :
Nikiema Gambila Edouard : Coordonateur Provincial du PNGT2/Soum/Djibo
Kaboré Narcisse Materne : Agronome
Kané Sia Francine : Economiste

- Brief introductory meeting with provincial team to discussion mission objectives and provincial activities.

- Organizing Village Development Committees (CVGTs) and village development plans (PGTs). Have not yet started funding of micro projects due to recent opening of provincial office and arrival of team.

Other Government Agencies
Sawadogo Jean-Bosco : Technicien Superieur d'Elevage

Traoré Soungalo : Coordonnateur National du Projet Appui au Programme Sahel Burkinabé (financement PNUD/FENU)

Village : Tougonayel
Tamboura Hamadoum Hassane : Comité de Gestion du Parc de Tongonayel (Vaccination Park)

- Visited Vaccination Park that serves 8 villages. Vaccinate about 800-900 head of cattle per year at 100 fCFA per vaccine. Also vaccinate itinerate animals passing through.
- Seven-person management committee (including two women) responsible for activities. Committee was not created with a construct of poor vs. non-poor representatives in mind.
- Adjoining borehole developed in 1995 at a cost of 7 million fCFA (45 meter depth). The village chief allocated land with condition that it is located 100 meters from nearest field to allow for animal passage. Well was originally intended for livestock agent (living adjacent to vaccination park) and animals using park. Turned over to village due to water shortages. Pump broken down for over one week due to over use. Committee searching for necessary part.
- Little to no conflict between livestock and agriculture due to fact livestock movements occur during November/December after harvest, and that livestock provide needed fertilizer during the planting season.

Village : Belehede
Tamboura Sadjo : Président Comité Gestion du Forage
Harouna Massalaki : Membre
Maiga Hassane : Membre

- Another borehole in the area is in use with people pumping water virtually 24 hours per day 7 days per week due to lack of water in surrounding area. Livestock herders pay 1,500 fCFA for small herd (25-30 animals), 2,500 fCFA for a larger herd.

GnaGna Province (Bogande)

Government

Provincial Office PNGT2 :
Nassa Suleymane : Coodonateur Provincial
Ilboudo Joseph : Economiste
Lankoande Abadou : Ingénieur Agronome
Combary Victoire : Sociologue

- Brief introductory meeting to introduce provincial project team and to discuss mission objectives.

Other Government Agencies :

Jean Paul Comparé : Haut Commissaire Gnagna Province

- Courtesy meeting to announce arrival and objectives of mission in Gnagna Province.

Kayaba Korsaga : Préfet de Thion

- Courtesy meeting to announce arrival and objectives of mission in Thion.

Village : Kossougoudou
Lankoandé Kokoro : Président CVGT
Kobori Jean-Baptiste : Sécrétaire
Mano Diagoundo : Trésorier
Groupement Gestion Barrage

- Visited Kossougoudou Barrage (dam). Constructed during colonial period (1959) using forced labor. Original purpose was to provide a reservoir primarily for livestock use. Dam modified in 1999 to allow development of about 35 ha irrigation scheme, primarily for rice and maize production (and some dry season vegetable gardening). Parcels range from 0.15 to 0.25 ha and have been distributed to about 183 households/participants. Among the participants are 3 women's groups with 0.25 ha each and one youth group with 0.25 ha. The five concerned villages (surrounding the dam) met and determined distribution criteria.

- Dam spillway is experiencing operational problems. Population has attempted to recover spillway channel for cultivation, which cause blockage, especially during high runoff year. Spillway protection dikes have collapsed in places and population is seeking PNGT 2 funding to help fund the repair. Unless cultivation is prohibited in the spillway channel, this problem will likely persist.

- Environmental and Social Assessment was reported done prior to 1999. Population notes increase in pressure on surrounding areas, especially around reservoir, from livestock. Beginning to adopt measures to control animal

movement, such as live fencing. Population was supported for a short time by an extension agent from Ministry of Agriculture to introduce improved irrigation/agricultural techniques but now left on their own.

Village : Bogmissi
Yorga Yombo : Président CVGT
Yorga Abadou : Responable s/c Environnement
Zabré Ardjimbouga : Sécrétaire Adjoint
Groupement Bogmissi (CAS)

- Visited site where rock bunds (cordons pierreux) have been introduced with PNGT 2 support for soil recovery and restoration. Rock source is about 1-2 km distance from fields. Use donkey driven carts to recover stones. One hectare requires about 3 bunds spaced at 100m intervals. One cart of stones costs about 250fCFA, but to avoid problems farmers pay a lump sum of 15,000fCFA per ha.
- Also introducing reforestation using acacia species. Paying 75 fCFA per tree at a private nursery. Objective is to recover abandoned land that was formerly cultivated but is now degraded beyond use. Positive benefit is that population that would have normally be forced to migrate can remain and continue to cultivate.
- Population is concerned that arable land is running out making it difficult to divide among family (father to son, husband to wife).

Village : Thion
Lankoandé Abadou : Président CVGT
Lankoandé Larba : Responsable du Comité de Contrôle
Lankoandé Antoine : Responsable s/c Hydraulique
Groupements et Village Thion

- Visited dam built in 1960 and rehabilitated by PNGT 1 in the 1990's. Spillway was destroyed by large flood event and was reconstructed. Irrigation infrastructure was started but never completed. Population is seeking additional funding from PNGT 2 to finish the work.
- Population intends to cultivate about 10 ha of rice, maize, potatoes, vegetables, etc. on 0.15-0.25 ha plots working in groups. Land distribution has not yet been done. Group approach adopted due to large population concerned living in 11 villages surrounding the dam.

Village : Bombonyenga

Ouedraogo Pascal : Infirmier/CSPS Boubonyenga
Ouattara Pascaline : Accoucheuse/CSPS Boubonyenga

- Visited health post and maternity clinic constructed with funding from the World Bank and operated with support from UNDP. Health post receives and average of about 150 patients visits per month for treatment, vaccinations, etc. Center appears to be well run and appreciated by population. Medical waste is disposed of by burning in an open field at the back of the post.
- Maternity clinic offers prenatal, family planning, delivery, pediatrics and communication services. Delivery waste is disposed of by burial at back of clinic. Most deliveries still made within villages. Clinic delivers on average about 8 per month.

Tindano Yemboa : Président CVGT
Prosper Tindano : Sécrétaire
Sa majestée Bourrgou Yensoangou : Chef Coutumier et Responsable Fonction
Yarga Pierre : Comité Santé
Bourgou Betié : Comité Foncier
Tindano Sebastien : Comité Environnement
Tindano Elie
Bourgou Biaboa : Comité Scoloarisation
Lankoandé Potanao : Comité Elevage
Bourgou Angelique : Organisatin Feminine
Village et Groupements Boubonyenga

- Met briefly with village. Priorities for this village are lack of water (men) and lack of firewood (women). Have introduced improved stove (foyer amélioré) to reduce firewood consumption. Seeking PNGT 2 funding for a variety of activities contained in Village Development Plan (Plan Gestion Terroir).

Village : Lanyabdi
Tindano Guijambédo : Président
Lankoandé Péri : Sécrétaire
Lankoandé Yenhangla : Vice Président
Village et Groupements Lanyabdi

- Shown 10 ha area that has been restricted from open use by surrounding communities (mise en defens). Land was donated by local village chief (chef de village) and boundaries are clearly marked by red paint on larger trees. Livestock is given grazing access during dry season but no cutting of trees is permitted.
- Population wants to promote introduction and growth of native species, such as the baobab, through reforestation, to provide leaves for cooking, etc.
- Village also interested in receiving PNGT 2 funding for rock bunds.

Annex 4

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Annex 5

Policy, legal and administrative framework

1 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

1.1 INTRODUCTION

Environmental protection in Burkina Faso is highly imperative due to the increasing risks of land degradation and desertification, affecting both the country's rural economy and natural resource base.

To date, there has been progress in environmental protection and natural resource management and a number of environmental policies and strategies have been adopted by the Government which reflects this. EIA legislation, however, is relatively new which means that few projects have been assessed adequately for their potential impacts on the natural resource base. Moreover, according to officials at the Ministry of Environment and Sustainable Livelihoods, a recently formed institution, there is currently weak capacity to manage environmental issues. This is an area which will be supported with training under the CBRDP/SILEM program.

This section briefly outlines the policy, legal and administrative framework for environmental management in Burkina Faso.

1.2 POLICY AND LEGAL FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

1.2.1 *National Environmental Policies*

Burkina Faso was one of the first countries in Africa to formulate its National Environmental Action Plan (NEAP). The Plan was approved by the Government in 1991. Much of the government's policy on the environment is defined by the NEAP, which is the overall strategic framework covering three framework type programmes aimed at the management of specific environmental issues. These framework programmes include:

Box 1.1 ***Strategic Environmental Frameworks***

- A framework programme for the management of the national heritage, which comprises programmes and projects in forestry (national programme for village forestry, the national forest management programme, the wood energy programme), land development plans, programmes and projects for water, soils, wildlife and fisheries;
- A framework programme for land management takes into account the national land management programme, integrated programmes and rural development programmes;
- The framework programme for improving the living environment comprises urban and small town development projects, village water projects, construction programmes and projects for schools, clinics and access roads for farm produce.

1.2.2 *Laws Relating to Environment and Natural Resource Management*

Code of Environment

The driving legislation for environmental protection in Burkina Faso is the *Code de l'Environnement, or Code of Environment Law* N° 002/94/ADP of 19 January 1994. The Code has appointed the *Ministry of Environment and Sustainable Livelihoods* (formerly called the Ministry of Environment and Water) as the institution responsible for environmental management, pollution control, and protection and conservation of natural resources.

Article 4 of the Code describes the requirements for projects with potential impacts to undergo an Environmental Impact Assessment (EIA) and *Articles 6 and 7* provide a more detailed description of the outline of an EIA report, and the procedures for preparation and disclosing the report.

Guidelines for Environmental Impact Assessment

In parallel with the Code, a *Decret N° 2001-342* for EIA legislation was passed in 2001 by the Council of Ministers. The legislation outlines the application procedures, categories of environmental classification for various types of projects and programmes, and the requirements for approval and review of EIAs.

Annex F provides the tables for environmental classification as they are listed in the decree.

Other pertinent laws and legislation

There are also several other laws and legislation which relate to environmental protection and natural resource management. These include:

- *Law N° 006/97/ADP* (31 January 1997) for forestry
- *Law N° 23/94/ADP* (19 May 1994) for public heath
- *Law N° 014/96/ADP* (23 May 1996) for agrarian and land tenure reform
- *Decree N° 98-337/PRES/PM/MEE* (30 July 1998) for the organization, responsibilities and functions of the national council for environmental management (CONEDD); and
- *Law 23/97/II/AN* (22 October 1997) for mining.

Burkina Faso has also developed specific strategies and action plans to deal with the issues of soil fertility and land degradation, desertification, loss of biodiversity, and deforestation. These are illustrated in *Table 1.1*.

Table 1.1 *National Strategies and Action Plans*

Strategy/Plan	*Description*
National Environment Action Plan (NEAP)	The NEAP was approved by the Government in 1991. The Plan groups existing and planned environmental management actions into four "Programmatic Agendas": national resource management; village-level land management; improving living standards; and developing environmental. The Programmatic Agendas are complemented by two support programs, (1) managing information on the environment, and (2) coordinating and monitoring the NEAP.
National Soil Fertility Management Strategy and Action Plan (SNGIFS/PAGIFS) of January 1999	The SNGIFS/PAGIFS was presented by the GoBF in its *Document Operational Strategique* in 1999 as its top priority action plan for the agricultural sector. The plan focuses mainly on replenishment of soil nutrients in the Sahel and on Mossi plateau using the local rock phosphate (Burkina phosphate).
National Desertification Mitigation Action Plan (PAN/LCD of July 1999)	The major role of the PAN/LCD is to encourage and promote the process of participatory and decentralized planning (i.e. elaboration process of local development programs) and the use of the community based development approach as the most effective approach for combating desertification.
National Biodiversity Strategy and Action Plan (2001)	The objectives of the strategy are to provide a platform for protection of the country's biodiversity and endangered species and to promote sustainable natural resource use and management. The Strategy outlines the priorities for the next 25 years (2001-2025) while the Action Plan sets priorities for the next 5 years (2001-2005).
National Program for Land Management (NPLM)	The NPLM aims to integrate agriculture, forestry and fisheries and encourage sustainable land use and natural resource management.

1.3 ADMINISTRATIVE FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

1.3.1 National Level Administration

There are various agencies and institutions involved at the national level in environmental management as described below.

Ministry of Environment and Sustainable Livelihoods

Responsibilities for environmental management fall under the auspices of the *Ministry of Environment and Sustainable Livelihoods* (MESL). The MESL was established in November 2000 under Decree N° 2000-143/PRES/PM/MEE (17 April 2000). National environmental programs and policies are administered under the *Director General of Environment, Director General for Water and Forests,*

and Director General for Sustainable Livelihoods and steered by the *National Council for Environmental Management and Sustainable Development (CONEDD).*

Permanent Secretariat of the National Council for Environmental Management and Sustainable Development (SP/CONEDD)

SP/CONEDD, formerly known as CONAGESE, was established as part of Decree 2000-143, and recently reorganised in January 2003.

The Council is composed of representatives of various ministerial departments, institutions and agencies concerned with environmental protection; representatives of environmental associations, private sector representatives and experience environmental professionals/experts.

This council is responsible for providing technical guidance to the Minister of Environment and Sustainable Livelihoods on the application of policies and strategies which concern the environment and natural resource management.

A detailed diagram of the MESL and the various branches and departments of the government involved in environmental management is provided as *Figure 1.1.*

Other Line Ministries and Institutions in Burkina Faso

There are also a number of other line ministries and organisations which also have duties in environmental protection and management. The GoB is currently placing environmental cells or units at the department level within various ministries, and CONED is responsible for coordination. Twelve cells/units are planned, although only four a functioning at the moment (Ministère de l'Education de Base, Ministère de l'Education Superieur, Ministère de l'Agriculture, and Ministère des Mines et Energie). There are 31 total ministries in Burkina Faso.

1.3.2 *Regional and local level administration*

At the decentralized levels, there are various branches of the MESL which have responsibilities in environmental management and protection, as indicated in *Figure 1.1.*

At the provincial level, the *Provincial Director for Environment and Sustainable Livelihoods,* will manage environmental issues for each province. At the regional level, the *Regional Director for Environment and Sustainable Livelihoods,* will be supervising and implementing proposed activities.

At the local level, there are smaller bureaus working with the MESL, including

- Bureau of National Parks, Reserves for Fauna and Flora;
- Bureau for Forestry Management and the Bureau for Rural Forestry;
- Bureau for Combating Desertification;
- Bureau for Environmental Evaluation;

- Bureau for International Conventions and Environmental Resources,
- Bureau for Pollution Prevention and Control;
- Bureau for Environmental Education and Capacity Building; and
- Bureau for Inspection Control.

Figure 1.1 provides an overview of the institutional framework for decentralized environmental management.

1.4 *INTERNATIONAL CONVENTIONS, TREATIES AND AGREEMENTS RELEVANT TO ENVIRONMENTAL PROTECTION*

Burkina Faso has adopted numerous international agreements related to environment, although only a few have been ratified and/or signed.

Table 1.2 ***Treaties and Conventions related to the Environment***

Title	Date of Adoption	Signed/Ratified
Statutes of the International Union for Conservation of Nature and Natural Resources (as amended)	5 Oct 1948	
International Plant Protection Convention	6 Dec 1951	
Convention on Fishing and Conservation of the Living Resources of the High Seas	29 Apr 1958	
Convention on the High Seas	29 Apr 1958	
Convention on Wetlands of International Importance especially as Waterfowl Habitat	2 Feb 1971	
Convention concerning the Protection of the World Cultural and Natural Heritage	16 Nov 1972	Signed/ratified
Convention on International Trade in Endangered Species of Wild Fauna and Flora	13 Mar 1973	
Convention establishing a Permanent Inter-State Drought Control Committee for the Sahel	12 Sep 1973	Signed/ratified
Amendment to the Convention on International Trade in Endangered Species of Wild Fauna and Flora	22 Jun 1979	
Convention on the Conservation of Migratory Species of Wild Animals	23 Jun 1979	
Convention on the Conservation of European Wildlife and Natural Habitats	19 Sep 1979	
Protocol to amend the Convention on Wetlands of International Importance especially as Waterfowl Habitat	3 Dec 1982	
United Nations Convention on the Law of the Sea	10 Dec 1982	Signed
Amendment to the Convention on International Trade in Endangered Species of Wild Fauna and Flora	30 Apr 1983	
Convention for the Protection of the Ozone Layer	22 Mar 1985	Signed/ratified
United Nations Framework Convention on Climate Change	9 May 1992	Signed/ratified
Convention on Biological Diversity	5 June 1992	Signed/ratified
International Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa	17 June 1994	Signed/ratified

Title	Date of Adoption	Signed/Ratified
Stockholm Convention on Persistent Organic Pollutants	22 May 2001	Signed

1.5 *NON-GOVERNMENTAL ORGANISATIONS*

There are a number of non-governmental organisations (NGOs) working with communities in Burkina Faso in environmental management, community and rural development and in sustainable resource use.

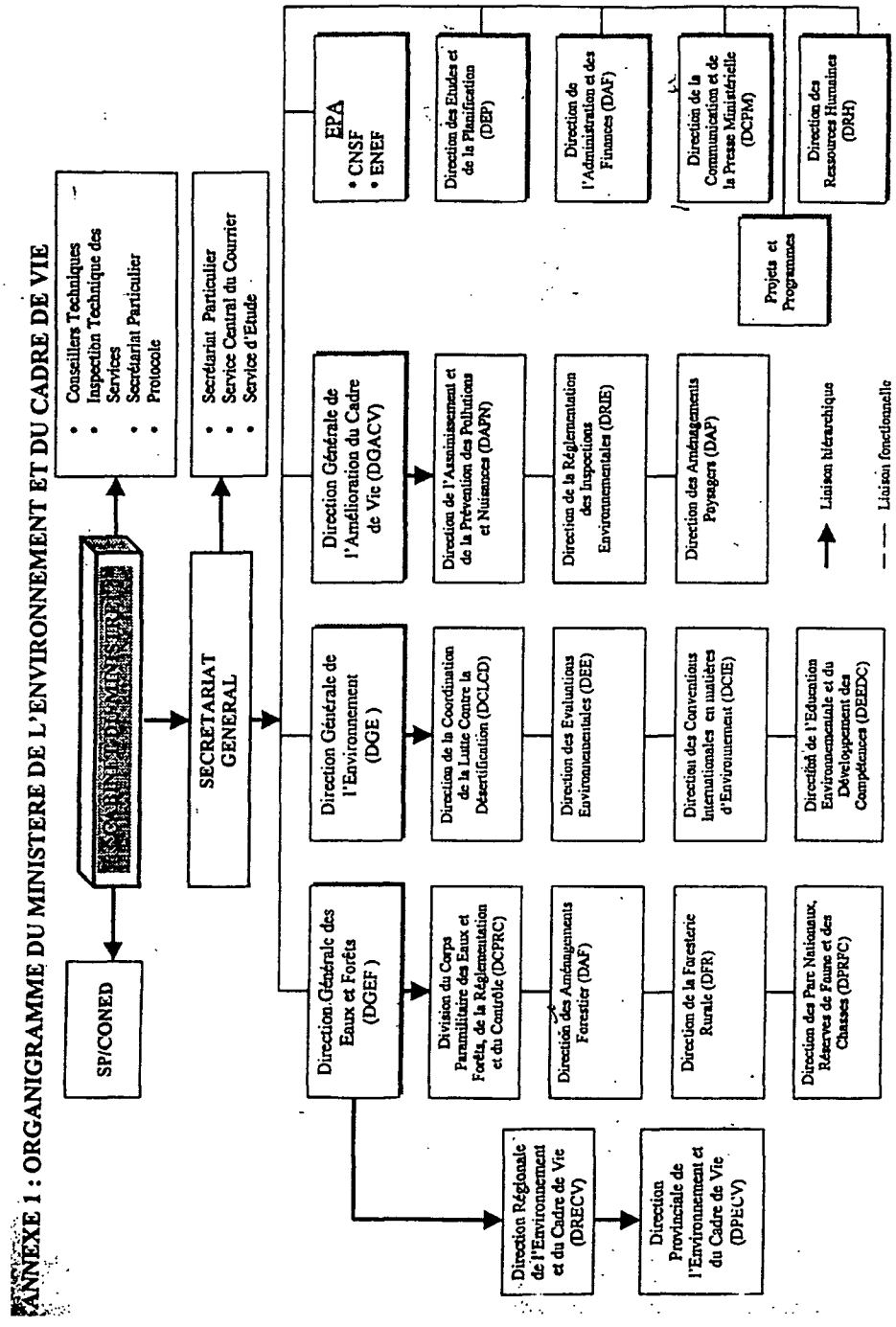
A list of the main NGOs is provided below, in *Box 1.3.*

Box 1.2 NGOs active in environmental protection and community development

- Amicale des Forestières du Burkina (AMIFOB) (Burkina Foresters' Club)
- Bureau de Liaison des ONG et Associations (BLONGA) (NGOs and Associations Liaison Office)
- Burkinabe Consumers Association
- Burkinabe Rights of Man and Peoples Movement
- Communication and Information Network of Women in NGOs in Burkina Faso
- Coordination des ONG/Associations/Femmes du Burkina (AMIFOB) (Burkina NGO/Associations/Women Coordination)
- Environment Studies and Research Group
- Friends of Nature Foundation
- Green Cross
- NGOs and Associations Steering Group on combating Desertification
- Secrétariat des ONG et Associations (SECOS) (NGOs and Associations Secretariat)
- Secrétariat Permanent des ONG (SPRONG) (Permanent Secretariat of NGOs)
- SOS -Sahel International
- Veterinaries without borders

Source: UNEP. 2003. PADELIA - Burkina Faso.

Figure 1.3 *Institutional Structure of the Ministry of Environment and Water*



Annex 6

Detailed Baseline Data

1 BASELINE INFORMATION

This chapter provides a baseline socio-economic analysis of Burkina Faso relevant to CBRDP and SILEM project sites.

1.1 IDENTIFICATION OF PROJECT SITES

For the first phase (2002-2005), CBRDP will cover 2000 villages in 26 provinces throughout the country. SILEM program will support rehabilitation of degraded lowland ecosystems for Burkina Faso's northern provinces of Soum, Oudalan, Seno, Yatenga, Loroum and Bam (100 villages) located in the northern Sahelian zone, covering 36, 829 sq km (13.4% of the country), and 662,129 inhabitants.

For the second, third and fourth phases (2006-2015), CBRDP aims to extend to all 45 provinces of Burkina Faso, whereas SILEM intends to cover 600 lowland villages and related micro-basin and watershed rural communities. SILEM's main project implementation areas are expected to be the following:

- Northern Sahel sylvo-pastoral and wildlife reserve;
- The protected natural habitats on the central Mossi plateau; and
- The protected natural habitats in the Eastern, Southern and Western provinces.

Since CBRDP intends to cover all rural villages in Burkina Faso by the end of Phase II, this baseline analysis will focus on the rural situation. Also, the baseline chapter will provide information pertaining to protected natural habitats to be covered by SILEM program.

1.2 BURKINA FASO: BACKGROUND

- Burkina Faso is situated in West Africa and bordered to the North and West by Mali, to the east by Niger, to the Southeast by Benin and to the South by Togo, Ghana and Côte d'Ivoire.
- Burkina Faso has a total area of 274,200 sq. km. (106,000 sq. mi.).
- There is an estimated population of 11.6 million people, with a growth rate of 3.2 per annum. (1)
- Capital City is Ouagadougou (pop.1 million), and other major cities are Bobo-Dioulasso (450,000) and Koudougou (90,000).
- GDP per capita was US $214 in 2001.
- According to the Human Development Index, Burkina Faso is among the ten least developed countries in the world (169 out of 175 countries).

(1) 2000 Poverty Reduction Strategy Paper

- 45.3% of the population falls below the national poverty line (30 cents per day per capita), and 85% of the population lives below the internationally recognised income poverty line (two dollars per day). (1)
- Life expectancy at birth is 44 years, and the illiteracy rate is at 75%. (2)

1.3 PHYSICAL ENVIRONMENT

1.3.1 *Agro-climactic Zones*

Burkina Faso can be divided into three major agro-ecological zones:

- In the North is the Sahelian zone, with 350-500 mm rainfall per year. The Sahelian zone is characterized by sand dunes interspersed with areas of tiger bush and hardpan, and hills and low lying rocky ridges. There is a predominance of steppe vegetation such as *Acacia Senegal, Acacia nilotica, Balanites aegyptica, Aristida spp, Cenchrus spp.* The baobab (*Adanosonia digitata)* is one of the most commonly found tall trees in the area.

- In the Centre is the Sudano-Sahelian zone (the Central Plateau, Central-North, Central-East, and East), with 700-800 mm rainfall per year, with high variability across small distances. The Sudano-Sahelian region is characterised by savannah. The most common species of tall trees are *Burtyrospermum parkii, Khaya senegalensis, Parkia biglobosa, Tamarindus Cymbopogon* and *Loudetia.* The most commonly found grasses are *Andropogon gayanus, Cymbopogon* and *Loudetia.*

- In the West and South is the Sudanian zone, with 800-1,000 mm rainfall per year. However, the Sahara desert is relentlessly moving south, and drying the wooded savannah and its thin layer of cultivatable soil into sun-blackened rock-hard *lakenite.* Here, the herbaceous layer is more dense and forms a continuous covering.

1.3.2 *Rivers and Plains*

Three principal rivers run through the country: the Komoé (Comoé) River is in the Southwest, which flows through Côte d' Ivoire to the Gulf of Guinea; in the Centre are the Mouhon (Black Volta), Nazinon (Red Volta), and Nakambe (White Volta) rivers, which join in Ghana to form the Volta; and in the Northeast are several small tributaries of the Niger. High plains of about 1000 to 1300 feet comprise the major part of the territory. The highest, Mount Tenakourou in the West near the border with Mali, measures 2500 feet, followed by the peak of Nahouri in the South.

(1) World Bank, 2002, Burkina Faso: Improving Service Delivery at the Local Level
(2) World Bank, 2003, African Development Indicators

1.3.3 *Climate*

The tropical weather in Burkina Faso is divided into two seasons: the dry season from November to May (with a cool and dry period from November to February, and hot weather from March to May), and the rainy season from June to October. The average temperature is 60°F (15°C) at night, and 85°F (30°C) during the day, except in the dry season when temperatures may rise to over 100°F (38°C). Annual rainfall is highly variable over space and time, and ranges from 40 inches to 10 inches. For example, in the Sahelian region of Burkina Faso, it may rain very hard for a short period of time on a household's one plot, but the second plot a few meters away may not get a drop of rain.

1.3.4 *Natural Resources*

Natural resources include manganese, limestone, marble, gold, antimony, copper, nickel, bauxite, lead, phosphates, zinc, and silver.

1.4 *SOCIO-ECONOMIC ENVIRONMENT*

1.4.1 *Population and land use*

There is an estimated population of 11.6 million people, with a growth rate of 3.2 per annum. Burkina Faso is one of the most populated states in western Africa, with 41 inhabitants per sq km. About 55% of the entire population lives in rural areas and the population distribution in Burkina Faso is uneven. The following is the breakdown of population concentration according to three zones:

- The Sahelian Zone in the North is a traditional herding area, with a low population density (10-12 person per sq. km). The Sahelian people are increasingly moving to the West, South and East, due to increasing desertification in the region. In the Sahelian Zone, the Fulani system combines traditional herding with mixed farming. Here, some households live like the Bwa-Dagari and others like the Mossi. For more information on the ethnic tribes of this region, please refer to the text in

- The Sudano-Sahelian Zone in the Centre and East is the most densely populated area (of around 40-50 person per sq.km). The Kadiogo Province, in which the capital city Ouagadougou is located, has 156 inhabitants per sq mile, and has the largest population. Ouagadougou, the capital city, counts some one million inhabitants. The second largest province is Kouritenga province in the East, with 47.6 inhabitants per sq mile. The Mossi system is prevalent in this zone, where households occupy separate concessions scattered across the territory. Here there are small pots (around the concession), village fields and beyond that, fallow land or bush.

- In the West, in the Sudanian Zone, the Bwa-Dagari system exists, in which households are grouped together and form a village concession consisting mainly of village fields and bush. It is sparsely populated and attracts people from the other two areas seeking better farming and living conditions. This is a cotton-growing region of Burkina Faso, with the most fertile soil in the country.

1.4.2 *The National Economy*

GDP per capita was US $214 in 2001, and according to the Human Development Index, Burkina Faso is among the ten least developed countries in the world (169 out of 175 countries). The economic performance has been steadily improving in the past 10 years, with the GDP growth rate at 5.6% in average. Agriculture and livestock account for 32% of GDP, 92% percent of labour force and 60% of exports. Industry accounts for 27.8% of GDP and 3% of labour force and is largely based on agriculture. Service contributes to 40.2% of GDP and 5% of labour force. The following are the main economic indicators:

- About 87% of the population of Burkina Faso are engaged in subsistence agriculture and nomadic stock keeping. There are about 1.3 million farms, marked by low productivity.
- A significant proportion of the male labour force migrates annually to neighbouring countries, particularly to Ghana and Côte d' Ivoire, for seasonal employment. Most workers are employed in the agriculture sector in growing peanuts, shea nuts, cotton, millet, corn rice, sesame sorghum and tending livestock.
- The main industries in Burkina Faso are cotton lint, beverages, agricultural processing, soap, cigarettes, textiles and gold.
- Burkina Faso exports cotton, animal products and gold. The country imports machinery, food products and petroleum.
- 220 million kWh (1996) of energy are produced in Burkina Faso using fossil fuels and hydro-electric power. The potential exists, and projects are underway, to increase the hydroelectric installed capacity of Burkina Faso. Electricity is provided by the parastatal utility Societe Nationale de l'Electricite et du Gaz (SONELGAZ). However, most of fuel (96%) in country is produced by burning wood.
- The oil industry in Burkina Faso is one of the key elements in the economy of the country since all petroleum products are imported in their refined form. Burkina Faso has a fledgling mining industry.

phenomenon, accounting for 94% of the national figure in 1998. There is a high percentage of inequity in Burkina Faso: 10% of the total population continue to account for 70% of aggregate national income, suggesting that there is not trickle down effect of transferring wealth to the poor. The poorest regions are the North, the North-Centre, the North-west, the East-Centre, the North-Centre, and the East. The following is the breakdown of poverty incidence and probability by agro-climactic zones:

Table 1.1 ***Incidence and Probability of Poverty by Agro-Climactic Zones***

Region	Incidence (%)	Probability (%)
Sahel (Sahelian Zone)	42.0	0.39
North-Centre (Sahelian Zone)	58.1	0.53
North (Sahelian Zone)	60.9	0.66
East (Sudano-Sahelian Zone)	46.6	0.54
Centre-East (Sudano-Sahelian Zone)	51.1	0.75
Centre (Sudano-Sahelian Zone)	35.8	0.27
South (Sudanian Zone)	37.3	0.29
Centre-West (Sudanian Zone)	44.9	0.49
North-West (Sudanian Zone)	49.3	0.58
West (Sudanian Zone)	33.5	0.30

Source: Poverty Reduction Strategy Paper of Burkina Faso, 2000

The incidence of poverty is highest among food crop farmers (50-52%), followed by cash crop farmers (42.4%), and unemployed persons (38.7%). The average household size among the poor is 7.6 persons. The following is the poverty trend by socio-economic groups:

Table 1.2 ***Poverty Trend by Socio-Economic Groups***

Socio-economic Group	Incidence of Poverty (%)
Food Crop Farmers	50.1
Cash Crop Farmers	42.4
Inactive	38.7
Other active workers	29.3
Craftsmen, businessmen	12.7
Private sector employees	11.1
Public sector employees	5.9
Total	**45.3**

Source: Poverty Reduction Strategy Paper Burkina Faso, 2000

1.4.4 Education

One of CBRDP's major goals is to increase literacy through alphabetisation program under its *Local Capacity Building* component. Literacy is a first prerequisite for successful capacity building and local development. Burkina

(1) Poverty line is expressed in terms of caloric intake at 2300/person/day, and CFAF 72,690 per adult per year.

Faso has one of the lowest literacy rates in the world at 18.5% (1998). The following are major problems encountering the education sector:

- Unit costs in primary education is high: 0.24 times per capita GDP as compared with 0.15 times on average for the African country.
- Dropout rates are higher in the North (10.9%) due to high mobility of transhumant pastoralists, and lower in the Southwest (3.5%). Dropout rates are higher among boys than girls (12.5% among boys and 7.1% among girls in the North).
- AIDS threatens the effectiveness of the system due to the increased rates of teacher and student absenteeism, and the growing number of AIDS orphans.

Rural women have the lowest literacy rate at 6.8%. Rural literacy rate is poor overall at 10.8%. Establishment of mobile schools and teaching centres seem to be effective mechanisms for combating illiteracy in rural areas. The following are the education indicators among rural and urban populations, according to gender:

Table 1.3 ***Education Indicators by Gender, Rural and Urban areas (1998)***

Education Indicators	Urban (%)	Rural (%)	Total (%)
Literacy Rate	**50.6**	**10.8**	**18.4**
Men	59.9	15.6	24.8
Women	42.0	6.8	12.9
Gross Enrollment-Primary	102.3	30.8	12.9
Boys	105.8	37.1	46.7
Girls	98.7	23.9	34.7
Gross Enrollment-Secondary	48.8	4.5	13.0
Boys	56.4	5.8	15.4
Girls	41.2	3.1	10.2
Gross Enrollment-Higher	4.9	0.0	1.3
Male	7.9	0.0	2.3
Female	1.9	0.0	0.4

Source: Poverty Reduction Strategy Paper, 2000

1.4.5 Health

CBRDP identified HIV/AIDS as the major health problem in the country, and aims to address HIV/AIDS problems through its Local Capacity Building and Local Investment Funds (LIF) components by conducting HIV/AIDS training and awareness increasing programs. The training will consist of providing information on prevention, care and the identification of specific interventions

related to alleviation and prevention of the disease through local development plans. (1)

Burkina Faso's population is growing at a rapid rate of 3.2% per annum, due to the high fertility rate (6.8 births per woman). The health indicators are among the poorest in Sub-Saharan Africa: life expectancy at birth is 54 years (as compared to average of 52 for Africa), child mortality (2) is 219 (compared to 151), HIV prevalence is 7% (African average at 8%), child malnutrition is at 32% (African average at 24%), and maternal mortality is 484 per 100,000 live births.

Burkina Faso has the second highest HIV incidence among Western African countries. The following is the breakdown of HIV/AIDS incidence according to age groups:

Table 1.4 ***Incidence of HIV/AIDS among population (2001)***

HIV/AIDS Incidence	Estimated number of people
Adults (15-49)	380,000 (7% of total population)
Women (15-49)	220,000
Children (0-15)	61,000
Adults and Children	**440,000**
Deaths due to HIV	44,000
Current living orphans	270,000

Source: UNADS/WHO Epidemiological Fact Sheet, 2002

About 60% of commercial sex workers in Ouagadougou and Bobo-Dioulasso have HIV/AIDS. The following is the breakdown of HIV/AIDS incidence among pregnant women by sites:

Table 1.5 ***HIV/AIDS among pregnant women by area (2000)***

Region/Site	Incidence of HIV/AIDS
Bobo-Dioulasso (Sarfalao)	7.2
Bobo-Dioulasso (Hamdallaye)	5.40
Ouagadougou (Kossodo)	4.8
Ouagadougou (Saint-Camille)	7.20
Gaoua	5.45
Ouaigouya (Tougan province, Northern Region)	**13.41**
Tenkodogo	2.86

Source: UNADS/WHO Epidemiological Fact Sheet, 2002

(1) Since the financial envelope is at US$ 3-5 per head for LIF, serious HIV/AIDS alleviaition and treatment can not be achieved through CBRDP.
(2) deaths before age of 5 per 1,000 births

HIV, malaria, tuberculosis, cholera, hepatitis A, meningitis, typhoid fever, yellow fever, schistosomiasis and dengue are major diseases that contribute to mortality in Burkina Faso.

1.4.6 *Migration*

Many Burkinabé are migrating within country from one region to another, or from rural to urban areas. Also, there has been migration to other countries such as Côte d'Ivoire and Ghana. However, in the last two years the trend has reversed, and due to recent instability in Western Africa, migrants have been returning to Burkina Faso. Burkina Faso has a very high percentage of migrant child labour, either to urban areas or to other countries. An estimated 9.5% (333,000) of children 9-17 years lived outside their homes, of which 29% (73,000) lived abroad, mostly in Côte d'Ivoire. The main determinant for child labour migration was the fact that the child never attended school. The highest shares of international child labour migration were found in South-West, Centre-East and East. (1)

The following are the types of migration that can be witnessed in Burkina Faso:

Box 1.1 ***Trends of migration in Burkina Faso***

Rural to Urban Migration:
The migration of young people towards urban centres in search of work is uncontrolled, and has lead to overpopulation in cities of Ouagadougou and Bobo-Dioulasso. This has also lead to over-exploitation of land and deforestation around large cities.

Migration to Other Countries:
Usually, rural males move mainly towards Côte d'Ivoire and to a lesser extent, towards Ghana. This results in drainage of the workforce from rural areas.

Regional Migration:
This type of migration is characterized by migration from infertile, dry land and/or overpopulated areas to regions that are under-populated and fertile. For example, in last 20 years, there has been increasing migration from Northern, Eastern and Central regions to Western and South-Western regions. This trend has increased since the drought of 1970-72.

(1) Burkina Faso: Child Labour Migration from Rural Areas, World Bank, 2002

1.4.7 *Administration in Burkina Faso*

Burkina Faso is governed under the constitution of 1991. The president whom is elected by popular vote for up to seven years heads the executive branch. The bicameral legislature consists of a 111-member elected national assembly and a 120-member appointed chamber of representatives. The country is divided into 45 provinces.

Table 1.6 ***Provinces of Burkina Faso***

Name	Capital	# of Departments	Population
1. BALÉ	Boromo	10	169,543
2. BAM	Kongoussi	9	212,295
3. BANWA	Solenzo	6	214,234
4. BAZÉGA	Kombissiri	7	214,450
5. BOUGOURIBA	Diébougou	5	76,444
6. BOULGOU	Tenkodogo	13	415,414
7. BOULKIEMDE	Koudougou	15	421,083
8. COMOÉ	Banfora	9	240,942
9. GANZOURGOU	Zorgho	8	257,707
10. GNAGNA	Bogandé	7	307,386
11. GOURMA	Fada N'Gourma	6	221,956
12. HOUET	Bobo-Dioulasso	13	674,916
13. IOBA	Dano	8	159,422
14. KADIOGO	Ouagadougou	6	976,513
15. KÉNÉDOUGOU	Orodara	13	198,936
16. KOMONDJARI	Gayéri	3	49,389
17. KOMPIENGA	Pama	3	73,949
18. KOSSI	Nouna	10	217,866
19. KOULPÉLOGO	Ouargaye	8	188,760
20. KOURITTENGA	Koupéla	9	250,699

Name	Capital	# of Departments	Population
21. KOURWÉOGO	Boussé	5	117,370
22. LÉRABA	Sindou	8	93,351
23. LOROUM	Titao	4	111,707
24. MOUHOUN	Dédougou	7	237,048
25. NAHOURI	Pô	5	121,314
26. NAMENTENGA	Boulsa	8	251,909
27. NAYALA	Toma	6	136,273
28. NOUMBIEL	Batié	5	51,449
29. OUBRITENGA	Ziniaré	7	198,130
30. OUDALAN	Gorom-Gorom	5	136,583
31. PASSORÉ	Yako	9	271,216
32. PONI	Gaoua	10	196,568
33. SANGUIÉ	Réo	10	249,169
34. SANMATENGA	Kaya	11	460,684
35. SÉNO	Dori	6	202,972
36. SISSILI	Léo	7	153,560
37. SOUM	Djibo	9	253,867
38. SOUROU	Tougan	8	189,726
39. TAPOA	Diapaga	8	235,288
40. TUY	Houndé	7	160,249
41. YAGHA	Sebba	6	116,985
42. YATENGA	Ouahigouya	13	443,967
43. ZIRO	Sapouy	6	117,774
44. ZONDOMA	Gourcy	5	127,580
45. ZOUNDWÉOGO	Manga	7	196,698

Source: Embassy of Burkina Faso, 2003

1.4.8 *Ethnic Groups and Religions*

Of the 60 ethnic groups that populate the country, the Mossi (48.6%), Bissa, Gourounsi and Gourmantché live in the central territories of the Sudano-Sahelian zone; the Fulani (7.8%) in the Northern and Northeastern territories of the Sahelian zone; the Dioula in the west, in the Sudanian zone. The linguistic groups may likewise be divided into three: the Voltaïc group, including the Mossi, Dagari, Lobi, Gourmantché (7%), Gourounsi, and Sénoufo; the Mandé group, including the Dioula, Marka, Samo, Bobo, and Boussancé; the Western Atlantic group with the Fulani. While French is the official language, Moré, Dioula, and Fulfuldé are the main national languages. Though traditional religions are practiced by 25.9% of the population, two other religious faiths are represented in Burkina Faso: Islam represents 52% and Christianity 17.6%.

Table 1.7 ***Major Ethnic Groups of Burkina Faso***

Ethnic Groups	Percentage of total population (%)
Mossi	48.6%
Fulani (Peul)	7.8%
Gourmantché	7%
Bobo	6.8%
Bisa-Samo	6.5%
Gourounsi	6%
Dagari-Lobi	4.3%
Bwa (Bwamu)	3%
Sénoufo-Marka-Dioula	2.2%
Others	7.8%

Source: Embassy of Burkina Faso, 2003

1.5 *ACCESS TO ASSETS*

1.5.1 *Access to Land*

Land tenure system is largely governed by traditional systems, in which the local chiefs make decisions regarding plot distribution among village residents and incoming migrants. In Burkina Faso, women do not have right to own land, but have the right to plant seeds of their choice on plots allocated to them by husbands, or males in the family. Their rights to cultivate plots increases with their status, and usually, the elder women (or the first wives) have much more weight in the decision-making process regarding plot tending. Allocation of separate plots to women helps households to diversify their risks, and to ensure provision of subsistence crops.

1.5.2 *Access to Productive Capital, Employment and Financial Services*

Rural people have the lowest access to capital and financial services. The economy of the poor remains largely non-liquid due to the absence of banks geared to their needs and the scant presence of micro-credit organizations.

1.5.3 *Access to Potable Water*

In 1998, 90% of households obtained their drinking water from wells, borehole and public taps. There is a trend to an improvement in the quality of drinking water, due to the national water supply policy. However, waterborne diseases are prevalent in rural areas and contribute to the high mortality and morbidity rates.

1.5.4 *Access to Electricity*

In rural Burkina Faso, less than one percent of households have access to electricity. In the cities, 63% of households use kerosene lamps, and 37% has access to electricity. Approximately 96% of household fuel comes from burning wood.

1.6 *LINKAGES BETWEEN LIVELIHOODS AND THE ENVIRONMENT*

There are several key linkages between livelihoods and environmental resources, which are relevant to rural areas in Burkina Faso. These are outlined below.

1.6.1 *Exploitation of local vegetation*

Logging

Wood is used for two main purposes: as a source of energy and as a building material. Wood represented 96% of the domestic energy consumed in 1993. In rural areas, the collection and sale of wood is particularly lucrative. When assessing the damage presented by collection and cutting of wood, it is important to assess whether villagers are collecting fallen dry woods, or are actively cutting living trees. Also, it is important to assess the percentage of deforestation that is contributed by commercial woodcutting. Deforestation rate is almost 2% per annum. (1)

Bush fires

Fire is used for the following in Burkina Faso: (*i*) clearing the fields; (ii) hunting; (iii) improving visibility; (iv) accelerating the re-growth of perennial grasses; and (v) customary rituals. Fire impoverishes the soil and reduces its productivity,

(1) World Resources Institute: http://www.wri.org/wdces/bu91_329.html

due to causing the loss of certain nutrients (nitrogen, sulphur), and organic matter. More than 75% of fires occur between October and December. (1)

Unsustainable herding practices

Pastoralism in Burkina Faso is based on the intensive exploitation of natural resources (grazing lands) without the use of agricultural and industrial by-products. Herders cut brunches from the trees and bushes to feed their animals during the dry seasons. Unsustainable practices of pastoralism contribute to severe degradation of grazing land in the Centre, East and North. Also, herders who settle on the edge of natural reserves (in the North) pose a great threat to the forests and the preservation of their biodiversity. (2)

Unsustainable farming practices

Unsustainable farming in Burkina Faso contributes to soil degradation and devegetation. In the cotton-producing regions of the west, overuse of fertilizers and pesticides increasingly contribute to the loss of native vegetation. Also, introduction of foreign species through farming contributes to the loss of biodiversity.

1.6.2 *Soil Erosion*

Soil erosion due to water erosion can reach an average of 10 ha/year in the Sahelian region. The short, heavy rains and the subsequent runoff are major causes of soil erosion. As a result, the soil become sandy, and its water retention capacity in decreased due to the loss of organic matter.

In the Sudanian-Sahelian region, soil is liable to crust formation, which produces run-offs during heavy rainstorms. Run-off water washes away nutrients from the soil.

In the Sudanian area, the Sahara desert is expanding into the region, and drying the wooded savannah and its thin layer of cultivatable soil into sun-blackened rock-hard *lakenite*. Here, the herbaceous layer is more dense and forms a continuous covering.

1.6.3 *Drought and Desertification*

Drought is one of major causes for desertification. There has been a persistent decline in rainfall since the 1960-70s. The average rainfall in Burkina Faso fell from 450 mm to 300 mm in the North, and from 1,100 mm to 860 mm in the South.

(1) Soil and Water Conservation in Burkina Faso, ODI, 1998
(2) Ibid, p.13

There is growing evidence that changes in surface albedo and reduced evapotranspiration (associated with devegetation) are instrumental in reducing precipitation in areas. Devegetation has also resulted in reduced ground-water recharge, increased soil-erosion and reduced soil fertility.

In the Sudano-Sahelian zone, there are 'cemeteries' of dead woodlands, with the Sahelian species such as *Acacia Senegal* and *Pterocarpu lucen* colonizing the region. Due to droughts, farmers have increasingly begun cultivating marginal areas and muddy soils susceptible to erosion.

In the Sahelian zone, declining and less reliable rainfall, the result of climate change and deforestation, is making rural life more difficult - pastures are disappearing and land is becoming more unsuitable for farming. As a result of the precarious livelihood, they lack food, water and income security. The malnutrition rates of children in the Sahelian zone are among the highest in the world.

1.7 BIODIVERSITY IN BURKINA FASO

For the first phase (2003-2005), SILEM will support rehabilitation of degraded lowland ecosystems for Burkina Faso's Northern provinces of Soum, Oudalan, Seno, Yatenga, Loroum and Bam (100 villages) located in the Northern Sahelian zone, covering 36 829 sq km (13.4% of the country), and 662,129 inhabitants.

For the second, third and fourth phases (2006-2015), SILEM intends to cover 600 lowland villages and rural communities living in micro-basins and watersheds. SILEM's main project implementation areas are the following:

- Northern Sahel sylvo-pastoral and wildlife reserve;
- The protected natural habitats on the central Mossi plateau; and
- The protected natural habitats in the Eastern, Southern and Western provinces.

Table 1.8 Officially Protected Forest/Natural Habitats of interest for the Project

Province: From North (Sahel) to South (Sudan)	Name of the Natural Habitat	Location (Department/ Village)	Date of official Classification	Size (hectares)
Soum, Seno, Oudalan	Sylvo- pastoral and partial wildlife reserve of Sahel	Seno, Oudalan, Soum	1970	1,600,000
Sanmatenga	Yabo (Forêt Classée)	Kaya	1936	1,000
	FC Dem	Kaya	1937	350
	FC Nakambé		1936	2,000
Namentenga	FC Tougouri		1936	40
Sourou	FC Sourou	Yaba	1937	14,000
Passoré	FC Niouma	Yako	1954	735

Province: From North (Sahel) to South (Sudan)	Name of the Natural Habitat	Location (Department/ Village)	Date of official Classification	Size (hectares)
	FC Twéssé	Yako	1954	490
Oubritenga	FC Nakambé	Ziniare, Manga, Kombissiri	1953	98,000
	FC Ziga	Ziniaré	1953	9,000
	FC Gonsé	Saaba	1953	6,000
	FC Bissiga	Zitenga	1941	4,100
Kadiogo	FC Barrage	Ouagadougou	1936, 1941	260
Sanguié	FC Kalio	Pouni	1936, 1940	12,000
Mouhoun	FC Pâ	Boromo	1937	15,625
	FC Bonou	Boromo,	1937	1,700
	FC Tuy	Bondokuy	1940	50,000
	FC Nasébou	Boromo	1937	14,000
	FC Sâ	Dédougou	1940	5,400
	FC Kari	Dédougou	1938	13,000
	FC Ouoro	Dédougou	1938	14,000
	FC Toroba	Dédougou	1938	2,700
	FC Tissé	Dédougou	1938	21,500
	FC Sorobouty	Boromo	1938, 1940	5,800
	FC Ballé	Boromo	1937	115,000
Ganzourgou	FC Wayen	Wayen	1941	12,000
Kouritenga	FC Sitenga	Koupéla	1936	840
Houet	FC Maro	Houndé	1940	50,000
	FC Bahon	Houndé	1937	8,500
	FC Tui	Houndé	1940	19,200
	FC Dindérosso	Bobo-Dioulaosso	1936,1941	2,150
	Mare aux Hippopotames	Satiri	1937	300
	FC Koulima	Bobo-Dioulasso	1936	34,000
	FC Bansié	Bobo-Dioulasso	1937	4,300
	FC Mou	Bobo-Dioulasso	1938	10,700
	FC Dan	Bobo-Dioulasso	1953	117
	FC Téré	Kouka	1951	1,200
	FC Kou	Bobo-Dioulasso	1951	350
	FC Péni	Bobo-Dioulasso	1942	1,800
	FC Koa	Bobo-Dioulasso	1936	9,900
	FC Bambou	Bobo-Dioulasso	1937	12,000
	FC Kapo	Houndé	1937	260
Boulgou	FC Ouilingoré	Zabré	1936	6,850
	FC Yakala	Tenkodogo	1936	1,600
Sissili	FC Sissili	Léo	1955	32,700
Nahouri	FC Pic de Nahouri	Pô	1938	836
	FC de Nazinga	Pô	1953	38,300
Bougouriba	FC Dibon	Diébougou	1954	1,600
	FC Bougouriba	Diébougou	1955	20,000
	FC Bontioli	Diébougou	1957	8,500
	FC Nabéré	Diébougou	1953	29,500
Comoé	FC Bérégadougou	Banfora	1953	5,000
	FC Bonouna	Sidéradoufou	1955	1,300
	FC Boulon	Sidéradoufou	1955	12,000
	FC Kongoko	Sidéradoufou	1955	27,000
	FC Kaflandé	Banfora	1953	30,000
	FC Diéfoula	Niangoloko	1937	85,000
	FC Logoniégué	Niangoloko	1955	29,000
	FC Babolo	Niangoloko	1943	550

Province: From North (Sahel) to South (Sudan)	Name of the Natural Habitat	Location (Department/ Village)	Date of official Classification	Size (hectares)
	FC Gouandougou	Sidéradougou	1955	9,500
	FC Dida	Mangodara	1955	75,000
	FC Toumousséni	Banfora	1954	2,500
	FC Yendéré	Niangoloko	1934	700
	FC Source de Mohoun	Moussodougou	1955	100
	FC Niangoloko	Niangoloko	1936	6,654
Poni	FC Koulbi	Batié	1955	40,000

Source: SILEM PAD, 2003

Table 1.9 Wildlife Biodiversity Reserves of Interest to the Project

Name	Classification	Size (hectares)	Year created	Province
Wildlife reserve of Arly	Full	76,000	1954	Tapoa
Wildlife reserve of Madjoari	Full	17,000	1970	Tapoa
Wildlife reserve of Singou	Full	192,000	1955	Gourma
Wildlife reserve of Bontioli	Full	12,700	1957	Bougouriba
Wildlife reserve of Arly	Partial	96,000	1954	Gourma
Wildlife reserve of Kourtiagou (W	Partial	51,000	1957	Tapoa
Park)		223,700	1955	Gourma
Wildlife reserve of Pama	Partial	36,000	1957	Bougouriba
Wildlife reserve of Nabéré	Partial	29,500	1957	Bougouriba
Wildlife reserve of Bontioli	Partial			
Total		**733,900**		

Source: SILEM PAD, 2003

1.7.1 *National Parks in Burkina Faso*

- **Forêt Classée de la Mare aux Hippopotames**

This reserve lies in Bobo-Dioulasso District in the West of the country, 80km north of the state of Bobo-Dioulasso (the second largest town in the country). It is situated between the Black Volta River and the Bossora/Bala highway. The marshy areas are to be found in the North, and along the Black Volta and its tributaries. "Hippopotamus Pool" is the southern part of the reserve has water all year round and covers some 660 ha. The forest is divided into two parts by the River Leyssa, which flows west into the Black Volta. The Mare aux Hippopotames flows into the Wolo River, a tributary of the Layessa which joins the Black Volta a further 1 km downstream.

Vegetation generally comprises open forests, rich in species with Guinean affinities, and gallery forests along the water courses. The most common species are *Anogeissus leiocarpus, Crataeva adansonii, Nauclea latifolia, Cola cordifolia, Berlinia grandiflora, Detarium microcarpum, Elaeis guineensis, Raphia sudanica, Daniellia oliveri, Hymenocardia acida, Lannea velutina, Parinari*

polyandra, Albizzia chevalieri and *Pterocarpus erinaceus.* In drier areas, forest gives way to savannah, with *Combretum spp., Isoberlinia doka and grasses, such as Andropogon gayanus.* Finally, there are the areas of aquatic vegetation, and those frequently flooded. Floating vegetation in the lake includes *Pistia stratioides, Eischornia natans,* and species of *Azola, Neptunia* and *Ipomea,* while on the banks are dense thickets of species such as *Ficus congensis* and *Canthium correlia.* Zones flooded from time to time include species such as *Mitragyna inermis* and *Crataeva religiosa.*

Fauna: the most important large mammal is hippopotamus, of which there were 39 in 1989. Numbers are higher during the wet season. The fauna includes some 200 species, with diversity particularly high in the lake area. Noteworthy groups are the *ardeids, francolins* and *columbids.* Hippopotamus pool is an important breeding and nursery ground for fish such as *Tilapia.*

Local people are Bobo, traditionally agriculturalists, together with some Mossi migrants and Peul stock-raisers. There are five villages (Badema, Bala, Bossora, Paramasso and Sokourani) in close proximity to the reserve with some 22,000 inhabitants. Slash-and-burn agriculture is practised, the main crops cultivated being *Pennisetum americanum* and *Sorgum spp.* At Bala, the main activity in the dry season is fishing. Women collect fungi in the wet season.

Management Constraints: in the South-west of the country, rice is becoming an increasingly important crop and with it the demand for suitable wetland. Thus, the status of the reserve as a protected area will become more important.

- **Les forêts classées des Deux Balés**

This reserve is located in the Central Western section of the country, in Black Volta Province just west of the Black Volta River. The physical feature entails an undulating granitic plain, broken up in places by rock outcrops and lateritic plateaux.

Vegetation comprises Sudano-Zambezian savannah with a carpet of grasses, and trees such as *Anogeissus leiocarpus, Isoberlinia doka* and *Terminalia laxiflora.* There are gallery forests on the riverbanks.

Mammals include: hippopotamus *Hippopotamus amphibius,* buffalo *Syncerus caffer,* elephant *Loxodonta africana* (T), crocodile *Crocodylus sp.* and antelopes, although the diversity of fauna has been reported as being reduced.

Management Constraints: poaching occurs, and in 1968 there was a considerable reduction of large mammal populations by the "Service de l'Elevage".

- **Parc national de Pô**

This national park is situated in the Central part of the country in Ougadougou Province. Physical features consist of flood plains of alluvial clays or alluvial sands and mud, which extend along both banks of the Volta Rouge River are the dominant feature of the park. During the dry season the river is reduced to isolated waterholes. In general, the area is low-lying, apart for a few peaks of granite and laterite rising to 400 m.

Vegetation comprises Wooded savanna predominates, comprising: *Combretum lamprocarpum, Piliostigma thonningii, P. reticulatum, Butyrospermum paradoxum, Terminalia avicennioides, T. laxiflora, Detarium microcarpum, Anogeissus leiocarpus, Combretum binderanum* and *Crossopteryx febrifuga,* with *Mitragyna inermis* restricted gallery forests on the banks of the river. *Isoberlinia doka* and baobab *Adansonia digitata* are also present. The herb layer is dominated by grasses, such as *Andropogon ascinodis, A. gayanus, Hyparrhenia glabriuscula, H. involucrata, H. rufa, H. smithiana, H. subplumosa, Cymbopogon giganteus, Ctenium newtonii, Schoenefeldia gracilis, Brachiaria jubata, Aristida kerstingii, Loudetia togoensis, Chrysochloa hindsii, Sporobolus festivus, S. pyramidalis,* and *Oryza longistaminata.*

Fauna include lion *Panthera leo,* elephant *Loxodonta africana* (T), buffalo *Syncerus caffer,* waterbuck *Kobus ellipsiprymnus,* Bohor reedbuck *Redunca redunca,* roan *Hippotragus equinus,* hartebeest *Alcelaphus buselaphus,* common duiker *Sylvicapra grimmia,* red-flanked duiker *Cephalophus rufilatus,* oribi *Ourebia ourebi,* bushbuck *Tragelaphus scriptus,* warthog *Phacochoerus aethiopicus,* baboon *Papio anubis,* vervet monkey *Cercopithecus aethiops,* and patas *Erythrocebus patas.* There are doubts as to whether all these species still live in the park.

Management constraints are as follows: all permanent ponds are utilised continuously by local fishermen, thereby restricting wildlife access to water. Poaching is the severest threat, especially to elephants, large ungulates and cat species, which are killed to supply urban markets. It has been partly checked in the eastern part of the park since the introduction of vehicles and regular patrols, but much of the park is still subject to incursions, both by traditional users of its products as well as visitors from the towns and cities. At present, there are three operational guard posts, but seven more need to be equipped to provide full protection. Other threats include cattle grazing and woodcutting by local people (especially during the dry season), land-clearance for agriculture and the commercial collection of firewood.

- **Parc national de "W"**

  It is located in Fada n' Gourma province in the extreme Eastern corner of the country on the international borders with Benin and Niger. The total area is 235,000 ha; part of the international W park complex shared with Benin (568,000ha) and Niger (220,000ha). The park comprises a peneplain in the upper Niger basin. It includes a stretch of the Mékrou River, which forms the international border with Benin.

  Vegetation: open Sudanian savannah predominates in the North of the park, while Soudanian wooded savanna has developed in the South, characterised by *Balanites aegyptiaca, Vitellaria paradoxa, Parkia biglobosa, Entada africana, Burkea africana, Terminalia avicennioides, Pterocarpus erinaceus, Detarium microcarpum, Piliostigma reticulatum, Sterculia tomentosa, Sclerocarya birrea, Afzelia africana, Maytenus senegalensis, Combretum* spp., *Acacia* spp. The shrub-layer is characterised by *Anogeissus leiocarpus, Daniellia oliveri, Khaya senegalensis,* and *Cassia sieberana.* Gallery forests are along the rivers, comprising a thin cover of *Ficus* and other species, with a herb layer dominated by *Schoenefeldia gracilis, Loudetia simplex, L. togoensis,* and *Hyparrhenia hirta.*

  Fauna include: lion *Panthera leo,* leopard *P. pardus* (T), cheetah *Acinonyx jubatus* (T) (unconfirmed), elephant *Loxodonta africana* (T), buffalo *Syncerus caffer,* waterbuck *Kobus ellipsiprymnus,* kob *K. kob,* Bohor reedbuck *Redunca redunca,* roan *Hippotragus equinus,* hartebeest *Alcelaphus buselaphus,* bushbuck *Tragelaphus scriptus,* topi *Damaliscus lunatus,* common duiker *Sylvicapra grimmia,* red-flanked duiker *Cephalophus rufilatus,* warthog *Phacochoerus aethiopicus* and olive baboon *Papio anubis.* Hippopotamus *Hippopotamus amphibius,* crocodile *Crocodylus sp.,* and tortoise in well-watered areas.

  Management Constraints: poaching and illicit removal of timber are continuing problems. Vegetation is degraded throughout the park.

1.7.2 *Wetlands of international importance in Burkina Faso, to be considered by SILEM* [1]

- *La Mare d'Oursi*

  La Mare d'Oursi is located approximately 50 km northwest of the town of Saouga and 275 km northeast of the city of Ougadougou, northernmost Burkina Faso. It is a permanent freshwater lake, and is set in a basin surrounded by a hilly landscape to the South and west and by dune plains to the north and east. The lake itself supports reedbeds of *Phragmites* and

(1) All information below is taken from the website: http://bch-cbd.naturalsciences.be/burkina/bf-eng/index.htm

Juncus, while the vegetation of the surrounding area consists of degraded Sahelian woodland and scrub (woody species include *Acacia senegal, Balanites aegyptiaca, Calotropis procera, Combretum glutinosum, Commiphora africana, Dichrostachys cinerea, Guiera senegalensis* and *Maerua crassifolia*) with a herbaceous layer dominated by *Schoenefeldia gracilis, Aridtida mutabilis, A. funiculata, Dactyloctenium aegyptium, Brachiaria xantholeuca* and *Zornia glochidiata*. The area is internationally important for water birds, many of which are trans-Saharan migrants, which breed in the Palearctic realm. Species include *Tachybaptus ruficollis, Pelecanus onocrotalus, Ardea cinerea, A. purpurea, Egretta alba, E. garzetta, Bubulcus ibis, Plegadis falcinellus, Anas acuta, Circus aeruginosus, Porphyrio porphyrio, Himantopus himantopus, Glareola pratincola, Vanellus spinosus, Charadrius dubius, Tringa erythropus, T. stagnatilis, T. nebularia, T. glareola, Calidris minuta* and *Philomachus pugnax*. No hunting is carried out by local people

- ***La Mare aux hippopotames***
  This reserve is located about 50km northeast of the city of Bobo Dioulasso, and 275km Southwest of the city of Ougadougou, Southwest Burkina Faso.
  It consists of a freshwater lake and associated pools and marshes in the floodplain of the Volta Noire river. During wet season floods, the river and lake are linked. The vegetation of the area liable to inundation is composed of truly aquatic species such as *Pistia stratiotes, Eschornia natans, Azola sp., Neptunia sp.* and *Ipomea sp.*; dense thickets of *Ficus congensis, Canthium cornelia* etc.; and herbaceous plants such as *Vetiveria nigratana* and *Hyparrhenia rufa*. The site also includes well-developed gallery forest (composed of *Berlinia grandiflora, Vitex doniani* etc.), dense dry forest, and open dry forest/shrubby savannah. About 22,000 people live in six villages in the surrounding areas. The site supports a rich mammal and bird fauna. Mammals include ungulates, such as *Alcelaphus buselaphus, Tragelaphus scriptus, Loxodonta africana, Hippopotamus amphibius* and *Hippotragus equinus*, as well as carnviores e.g. *Panthera pardus, Acinonyx jubatus* and *Crocuta crocuta*.
- ***Wildlife Reserve of Kourtiagou (W Park)***
  The site forms part of a large, trans-border protected area (shared by Benin, Burkina Faso and Niger). It is a floodplain region extending along the Mekrou river in the upper Niger basin. The region's vegetation is composed of shrubby and wooded savannah (e.g. *Balanites aegyptiaca, Entada africana, Vitellaria paradoxa* etc.), with gallery forest of *Ficus spp.* along the river. Human activities within the area include livestock rearing and agriculture. The site supports a rich mammal fauna, including ungulates such as *Alcelaphus buselaphus, Tragelaphus scriptus, Kobus spp., Gazelle spp., Loxodonta africana, Hippopotamus amphibius, Syncerus coffer, Hippotragus equinus* and *Damaliscus lunutas*, as well as carnviores e.g. *Panthera pardus, P. leo, Acinonyx jubatus, Hyaena hyaena, Crocuta crocuta* and

Lycaon pictus. Birds include *Leptoptilos crumeniferus, Circus pygargus, Pluvianus aegyptius, Tringa glareola, Calidris minuta* and *Philomachus pugnax.* There is some poaching and encroachment of agriculture into the National Park, which if uncontrolled, is likely to have serious impacts. A number of management measures have been proposed, including the establishment of a management body; *in situ* marking of the park boundaries; restoration of pools; acquisition of logistical support; repair of access tracks; and improved cooperation with the authorities in Niger and Benin.

1.7.3 *Wildlife Reserves of Interest for the Project*

- **Wildlife Reserve of Arly:**

  The reserve is situated to the east of Pama in Fada n' Gourma Province, in the South-east of the country on the international border with Benin. The area is a flat lowland bordered on the South-east by the Pendjari River. Some permanent ponds persist during the dry season. It mainly consists of undifferentiated Soudanian woodland predominates.

  Fauna: mammals in the area include: leopard *Panthera pardus*, lion *P. leo*, side-striped jackal *Canis adustus*, cheetah *Acinonyx jubatus*, elephant *Loxodonta africana* (T), hippopotamus *Hippopotamus amphibius*, buffalo *Syncerus caffer*, waterbuck *Kobus ellipsiprymnus*, western kob *K. kob*, bushbuck *Tragelaphus scriptus*, oribi *Ourebia ourebi*, hartebeest *Alcelaphus buselaphus major*, common duiker *Sylvicapra grimmia*, topi *Damaliscus lunatus*, roan antelope *Hippotragus equinus*, warthog *Phacochoerus aethiopicus*, patas monkey *Erythrocebus patas*, vervet monkey *Cercopithecus aethiops*, and olive baboon *Papio anubis*.

  Management Constraints: the reserve is divided into a total faunal reserve, where human settlement and interference are prohibited and a partial faunal reserve, administered as a hunting reserve. Poaching, fishing and illicit removal of timber are the principal problems facing reserve staff.

- **Wildlife Reserve of Kourtiagou**

  This reserve is located in Fada n' Gourma Province in eastern Burkina Faso, and covers 51,000 ha of land. It is adjacent to W National Park complex.

  Vegetation consists of wooded savannah, and mammals include spotted hyena *Crocuta crocuta*, caracal *Felis caracal*, kob *Kobus kob*, Bohor reedbuck *Redunca redunca*, oribi *Ourebia ourebi*, and bushbuck *Tragelaphus scriptus*. ***Management constraints:*** poaching, grazing and illicit timber extraction present continuing problems.

- **Wildlife reserve of Pama**

  The total area is 223,500 ha. It is contiguous to Singou Total Faunal Reserve (192,800 ha) and Arly Faunal Reserve. Vegetation is predominantly a wooded savannah, and mammals include lion *Panthera leo*, leopard *P. pardus* (rarely seen), olive baboon, *Papio anubis*, hares, and genets.

- **Wildlife reserve of Sahel**

  The reserve is located in Western Sahel, in the sub-préfecture of Dori. It lies in a sandy zone, with both ancient and more recent dunes in the northern part. Vegetation is a Sahelien bushland fauna includes gazelle *Gazella* sp., ostrich *Struthio camelus* (uncommon), hares, francolin *Francolinus* sp., and guinea fowl. The whole reserve is overgrazed and there is much tree destruction by logging.

- **Wildlife reserve of Bontioli**

  The reserve is located in the West African Woodland/savannah, in Gaoua Province in South-west Burkina Faso. The total area of the reserve is 12,700 ha.

  Fauna Wildlife numbers have declined dramatically, with only very low numbers of kob *Kobus kob*, roan *Hippotragus equinus*, and warthog *Phacochoerus aethiopicus*. Elephant *Loxodonta africana* pass through the reserves on their seasonal passage. The reserve is divided into a total faunal reserve, where human settlement and interference are prohibited and partial faunal reserve, administered as a hunting reserve.

  Management constraints include poaching, cattle grazing and illicit timber extraction continue to degrade the area.

Annex 7

Suggested Format for Environmental Impact Assessment Studies

Environmental Impact Assessment - Format (c)

Please use short descriptions to respond to the following:

General Description of Sub-project

Sub-project objective

[type here]

Sub-project phases, components, and budget

[type here]

Alternatives rejected by Sub-project Presenters

[type here]

Baseline Description

Could the sub-project have a negative impact on any of the following features?

Physical-chemical environment	*Biological Environment*	*Socio-economic environment*
☐ Groundwater ☐ Rivers, streams and springs ☐ Soil	☐ Pasture resources ☐ Wildlife ☐ Herbs and grasses ☐ Forest ☐ Protected areas or national parks	☐ Women's livelihoods ☐ Human health ☐ People's access to land they are currently using ☐ Ethnic communities

Please give a short description of the baseline for each tick above.

[type here]

Negative Environmental Impacts

For each you have ticked above, please describe the type of impact, risk, significance, and proposed mitigation and monitoring.

Type *of impact*	*Description of impact*	*Risk of impact (low, medium, or high)*	*Significance of impact (low medium, or high)*	*Mitigation and monitoring requirements*
[type here]	[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]	[type here]
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[type here]	[type here]	[type here]	[type here]	[type here]

(expand as necessary)

Environmental and Social Management Plan

Please insert the actions you propose to ensure that negative impacts are mitigated, or any required monitoring.

Action	*Who by*	*By when*	*Cost*
[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]

[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]

(expand as necessary)

Completed by: [type here]

Name: [type here]

Position: [type here]

Date: [type here]