



GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

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April 29, 2014

Dear LDCF/SCCF Council Member:

UNDP as the Implementing Agency for the project entitled: ***Burkina Faso: Adapting Natural Resource Dependent Livelihoods to Climate induced Risks in Selected Landscapes in Burkina Faso: the Boucle du Mouhoun Forest Corridor and the Mare d'Oursi Wetlands Basin***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by LDCF/SCCF Council in August 2012 and the proposed project remains consistent with the Instrument and LDCF/SCCF policies and procedures. The attached explanation prepared by UNDP satisfactorily details how Council's comments have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.TheGEF.org. If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Naoko Ishii
Chief Executive Officer and Chairperson

Attachment: GEFSEC Project Review Document
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee



REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: LDCF

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PART I: PROJECT INFORMATION

Project Title: Adapting natural resource dependent livelihoods to climate induced risks in selected landscapes in Burkina Faso: the Boucle du Mouhoun Forest Corridor and the Mare d'Oursi Wetlands Basin			
Country(ies):	Burkina Faso	GEF Project ID:	4971
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4598
Other Executing Partner(s):	Permanent Secretariat for the National Council for Environment and Sustainable Development (CONEDD)	Submission Date:	March 24, 2014
GEF Focal Area (s):	Climate Change	Project Duration (Months)	72
Name of Parent Program (if applicable):	n/a	Project Agency Fee (\$):	700,000

A. FOCAL AREA STRATEGY FRAMEWORK

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
CCA-2	Outcome 2.1 Increased knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas	Output 2.1.2: Systems in place to disseminate timely risk information	LDCF	1,080,299	1,441,754
CCA-1	Outcome 1.2: Reduced vulnerability to climate change in development sectors	1.2.1: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability	LDCF	5,495,872	20,167,782
CCA-1	Outcome 1.1: Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas	1.1.1: Adaptation measures and necessary budget allocations included in relevant frameworks	LDCF	423,829	9,063,006
Total project costs				7,000,000	30,672,541

B. PROJECT DESCRIPTION SUMMARY

Project Objective: To reduce local communities' vulnerability to the additional risks posed by climate change and build their resilience with focus on the natural resource management sectors in the Boucle du Mouhoun Forest Corridor and the Mare d'Oursi Wetlands Basin

Project Component	Grant Type ¹	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
1. Knowledge support platform on climate change impacts and risks	TA	<i>Increased knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system.</i>	1.1 A geo-based climatic, agro-ecological and hydrological information system ('SICOFORMO'), hosted by SP/CONNED and focusing initially on the BdM Forest Corridor and	LDCF	1,034,000	1,299,000

¹ TA includes capacity building, and research and development.

Project Component	Grant Type ¹	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
		<p><u>Evidenced by:</u></p> <ul style="list-style-type: none"> - Adaptation actions, with respect to ‘knowledge and understanding of climate risk’ in the project zones and at the national level, are implemented - The SICOFORM system is functional, nested within ONEDD and is composed of at least the following 4 monitoring sub-systems: (i) natural assets available (water, forests, wetlands) and ancillary information on their use; (ii) identification of critical areas for agro-ecological and hydrological services and their role in livelihoods; (iii) special features such as bushfire incidence, economic activities, population aggregations; and (iv) an overlay with the likely climate change impacts under different modelling scenarios, pointing out to areas of climate risk and vulnerability for communities and essential natural assets, upon which livelihoods depend. - Risk and vulnerability assessment are (i) conducted and (ii) kept up-to date (primarily through the SICOFORM) - Relevant risk information is disseminated to stakeholders (efficacy to be assessed through user surveys e.g.) 	<p>the MdO Wetlands Basin, is operational by end of project year 1 and it enables the analysis of climate-driven vulnerabilities and the cost-effective planning of specific adaptation interventions in Component 2 for strengthening social and natural assets</p> <p>1.2 Approx. 30 national and provincial planners, plus 60 local commune leaders and 30 staff from NGOs/CSOs are trained on the use and interpretation of analyses from the ‘SICOFORMO’ system with the aim of using them for climate-adaptive development planning and implementation</p>			
2. Vulnerability reduction and strengthening of resilience demonstrated in the BdM forest corridor (BdM) and in the MdO wetlands basin	Inv	<p><i>The climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO are strengthened by focusing on vulnerable natural and social assets in target project sites.</i></p> <p><u>Evidenced by:</u></p> <ul style="list-style-type: none"> - Adaptation actions, linked to ‘demo activities aimed at vulnerability reduction and resilience strengthening’, are implemented - Vulnerability and risk perception index. - Changes in livestock stocking percentage in wetland areas denote the 	<p>2.1 Effective demonstration site level participatory governance and project implementation structures are established, local adaptation plans are implemented, and local commune leaders and resource users are trained in climate adaptive and anticipatory management of natural and social assets</p> <p>2.2 Critical wetland areas, covering some 1,600 ha and of ephemeral rivers and lakes in the MdO Wetlands Basin, and which support 24,000 livelihoods, become more resilient to</p>	LDCF	5,260,335	19,441,541

Project Component	Grant Type ¹	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
		<p>adoption of a range management system that is more adaptive, sustainable and therefore resilient</p> <ul style="list-style-type: none"> - Wetlands and natural grasslands rehabilitated - Surface areas restored, rehabilitated or enriched with grassed, herbaceous and wooded vegetation, reducing loss of top soil, protecting riverbanks and improving infiltration in critical areas - Changes in land use practices that reduce the incidence of undesired fire at the landscape level 	<p>desiccation through improved management of water usage and soil (e.g. deforestation, trampling by livestock), and the replanting and protection of indigenous grasses and herbaceous vegetation resilient to significant climatic variance</p> <p>2.3 Flood and erosion control is ensured through a “surgical” and climate anticipatory approach in the BdM, by establishing flood tolerant and erosion resistant grassed and herbaceous swales</p> <p>2.4 Gazetted forests in the BdM are protected against climate-induced bushfire</p> <p>2.5 Through locally decided and enforced by-laws, an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin, aimed at avoiding overstocking during the dry season, is implemented with the support from sedentary communities and transhumant groups</p> <p>2.6 Polyculture and adaptive agro-ecological production systems in communal lands (at least 400 ha)</p>			
3. Climate change adaptation mainstreamed into local and regional development planning and finance	TA	<p><i>Climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin are integrated into key sectoral planning and investment frameworks with focus on local and regional levels. Evidenced by:</i></p> <p><u><i>Evidenced by:</i></u></p> <ul style="list-style-type: none"> - Adaptation actions, on ‘climate change adaptation mainstreaming’, are implemented 	<p>3.1 Climate risk management and climate resilient landscape management are integrated into the management (or master) plans for the BdM and MdO and relevant sub-strategies and plans</p> <p>3.2 Through learning, sharing, partnerships and wide collaboration frameworks, the project and ongoing rural development</p>	LDCF	405,665	9,007,000

Project Component	Grant Type ¹	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
		<p>- Development frameworks that include specific budgets for adaptation actions:</p> <p><u>At BdM:</u> 2 Regional Development Programs (PRDs) and 7 Communal Development Plans (PCDs) (Sono, Dédougou Tchériba Oury, Siby, Zamo, Tenado)</p> <p><u>At MdO:</u> 1 PRD and 2 PCDs (Oursi and Déou)</p>	<p>programs and related initiatives in the MdO Wetlands Basin and the BdM Forest Corridor address climate change concerns and options in their planning and implementation</p>			
Subtotal					6,700,000	29,747,541
Project Management Cost (PMC)				LDCF	300,000	925,000
Total Project Cost					7,000,000	30,672,541

C. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming cofinancing for the project with this form

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Cofinancing Amount (\$)
National Government	Permanent Secretariat for the National Council for Environment and Sustainable Development (SP/CONEDD)	Cash	770,000
National Government	Ministry of Environment and Sustainable Development (MEDD), Finance and Administration Section	Cash	7,000,000
National Government	MEDD, Minister's Office (pertaining to the Forest Investment Program)	Cash	3,229,673
National Government	MEDD, National Program for Silt Control (PLCE/BN)	Cash	2,375,600
National Government	MEDD, National Office for Protected Areas (OFINAP)	Cash	2,050,000
National Government	National Agency for the Promotion of Non-Timber Forest Products (APFLN)	Cash	647,300
National Government	Ministry of Agriculture, Hydraulics and Fisheries Resources (MAHRH)	Cash	600,000
Local Government	Regional Government of the Boucle du Mouhoun	Cash	200,000
CSO	OCADES	Cash	33,500
CSO	NATURAMA	Cash	1,061,468
CSO	Veterinaires sans Frontiers - VTF	Cash	4,690,000
GEF Agency	United Nations Development Program - UNDP	Cash	8,015,000
Total Cofinancing			30,672,541

D. TRUST FUND RESOURCES (\$) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount(\$) (a)	Agency Fee (\$) (b) ²	Total (\$) c=a+b
UNDP	LDCF	Climate Change	Burkina Faso	7,000,000	700,000	7,700,000
Total Grant Resources				7,000,000	700,000	7,700,000

¹In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table.

PMC amount from Table B should be included proportionately to the focal area amount in this table.

² Indicate fees related to this project.

E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants	937,500	1,533,627	2,471,127
National/Local Consultants	1,362,500	6,134,508	7,497,008

F. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION

A. CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF

For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter “NA” after the respective question.

A summary of what changed since the PIF is provided below.

Original project design in PIF	Adjustment/improvement made at CEO Endorsement
<p><u>Project title at pipeline entry:</u></p> <p><i>“Reducing vulnerability of natural resource dependent livelihoods in two landscapes at risk of the effects of climate change in Burkina Faso: Boucle du Mouhoun Forest Corridor and Mare d’Oursi Wetlands Basin”</i></p>	<p>The exact wording in the project title has changed. Its semantic meaning remains the same. Redundancy in the formulations has been removed. The finally title validated by national counterparts is as follows:</p> <p><i>“Adapting natural resource dependent livelihoods to climate induced risks in selected landscapes in Burkina Faso: the Boucle du Mouhoun Forest Corridor and the Mare d’Oursi Wetlands Basin”</i></p> <p>UNDP kindly requests the GEF to update the records in PIMIS and in the GEF Website.</p>
<p><u>Allocation of LDCF resources per component:</u></p> <p>Comp. 1) \$1,000K Comp. 2) \$5,400K Comp. 3) \$300K Project Management: \$300K</p>	<p>Detailed budgeting carried out in connection with the PRODOC development resulted in adjustments in the allocation of LDCF resources per component, but total LDCF request is unchanged.</p> <p>Changes are minor in components 1 and 2 (+/- 3%); in Component LDCF resources increased to \$405K. Project Management costs remained unchanged.</p>
<p><u>Co-financing resources:</u></p> <p>Indicative total: \$21.4 million Comp. 1) \$1.1 million Comp. 2) \$11.1 million Comp. 3) \$8.2 million Project Management: \$1.7 million</p>	<p>The total leveraged co-financing has increased by 50% from what had been foreseen at PIF stage, totaling of \$30.6 million in mobilized co-financing at CEO Endorsement stage.</p> <p>This significant increase was the result of a more in-depth baseline analysis and the effective engagement of development partners during the PPG stage.</p>

Original project design in PIF	Adjustment/improvement made at CEO Endorsement
	<p>The distribution of co-financing per component changed slightly, with a more substantial increase in Component 3.</p>
<p><u>Project Sites:</u> Only indicatively defined.</p>	<p>Sites within the project zone were defined and their choice validated. Local stakeholders were consulted. Their views and interest in the project helped shape the final choice. This is discussed at length in the PRODOC (refer to chapter 1.6 Introduction to the Project Zones)</p>
<p><u>Project Strategy:</u> Outputs described with some indications on activities.</p>	<p>Through site visits, stakeholder consultation and national validation, the project strategy is now fully developed and activities described.</p> <p>Feasibility assessments were completed and with due environmental and social safeguards applied to the proposed activities. Refer to UNDP PRODOC Part 2 and to the results application of UNDP's Environmental and Social Screening (ESSP) in PRODOC Chapter 2.13 <u>Safeguards</u>.</p> <p>Although still very much in line with the original strategy, the current outline of outputs and activities has some differences:</p> <ul style="list-style-type: none"> • A new output was introduced in Component 2 (output 2.1) aiming at planning the roll-out of demonstration activities in more detail, firming up partnerships and engaging stakeholders, and training them. At PIF stage, training would be provided under output 2.6. • Output 3.2 as defined the PIF (on the incorporation of the Polyculture model in relevant strategies, plans and investments in the project zones) has been dropped. The activities initially foreseen were considered to be sufficiently catered for under Output 3.1.
<p><u>Risk Analysis:</u> Cursory analysis based on assumptions and with limited stakeholder consultation.</p>	<p>Thorough risk analysis was carried out and the corresponding management response has undergone stakeholder scrutiny.</p> <p>Also, potential risks and impacts related to the following topics have been considered through the application of the ESSP: (1) Biodiversity and Natural Resources; (2) Pollution; (3) Climate Change; (4) Social Equity and Equality; (6) Culture; (7) Health and Safety; (8) Socio-Economics; (9) Cumulative and/or Secondary Impacts. Safeguards that apply to risks and impacts flagged through the exercise, all of which relating to the first topic, were incorporated into project design. PRODOC Chapter 2.13 <u>Safeguards</u> for more details.</p>
<p><u>Other aspects</u></p>	<ul style="list-style-type: none"> • Indicators fully developed • Management arrangement agreed upon • Project consultants' TORs developed

Refer to PRODOC, Chapter 2.4 *Design Principles and Strategic Considerations* for more details.

A.1 National strategies and plans or reports and assessments under relevant conventions

Refer to PRODOC Chapters 1.1.4 *Policy, legislative and regulatory context* and 2.2 *Project Rationale and Policy Conformity*. A summary is provided further down. Refer also to Chapter 1.4.2 *Institutional response to climate variability*.

The Government of Burkina Faso became a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and is classified among the non-Annex I parties. Burkina developed and submitted their National Adaptation Program of Action (NAPA) in 2007 and is entitled to benefit from the LDCF for the implementation of NAPA priority measures. In implementing priority interventions identified in the NAPAs, the project is consistent with the Conference of Parties (COP9) and also satisfies criteria outlined in the UNFCCC Decision 7/CP.7 and GEF/C.28/18. It also responds to Decision 1/CP.16, which invites Parties to enhance action on adaptation by “building resilience of socio-ecological systems, including through economic diversification and sustainable management of natural resources”. The project has been endorsed by both the national UNFCCC and GEF focal points.

The project responds to urgent and immediate adaptation priorities and actions identified in the Burkina Faso NAPA.² This proposal addresses 7 of the 12 priorities identified in the NAPA - noting that the other priorities are being addressed through other projects. This project is specifically aligned with and supportive of the NAPA’s three objectives: i) increased knowledge and understanding of climate variability and change-induced risks at the country level and in targeted vulnerable areas, ii) strengthened adaptive capacity to reduce risks to climate-induced economic losses, and iii) successful demonstration, deployment, and transfer of relevant adaptation technologies.

Burkina Faso has also defined national actions and policies oriented to creating a basis for sustainable development. The project strategy and proposed outputs are consistent with national development priorities, and have close substantive and institutional links and complementarities with the primary national development strategies and plans³ including:

- The SCADD and ‘2025 Vision’, both of which stress importance of climate risk to sustainable development and economic growth, and emphasize the links with natural resource management and ecosystem services.
- The Rural Development Strategy (RDS), where the objective is to ensure sustainable development of the rural sector in view to contributing to the fight against poverty, by consolidating food security, access to water and promoting sustainable development.
- The National Policy for the Environment (2007), which stresses the sound management of natural resources and their contribution to the country’s economic development.
- The Forestry Code (1997, currently being updated), which emphasizes the importance of managing forest resources rationally.
- The National Water Policy (2007) and the Action Plan for Integrated Water Resource Management (PAGIRE), which covers two phases, the current one being 2009-2015, and which seeks to increase access to water and sanitation through IWRM, while placing the management of scarce water resources high on the national agenda with a long-term and integrated view. Both the Water Policy and its Action Plan stress the importance of wetlands, especially those of international importance (Ramsar sites) and of river basins in the country’s economic development.
- Burkina Faso’s National Biodiversity Strategy and Action Plan (NBSAP 1999), which stresses that the country’s biodiversity endowment is limited and it needs therefore to be managed in a sustainable manner. The NBSAP is undergoing a review to align it with the global Aichi Targets, including the mainstreaming of climate change into the management of biodiversity.

² Available from <http://unfccc.int/resource/docs/napa/bfa01f.pdf>.

³ Refer to Chapter 1.1.4 for more detail on policies and strategies.

These largely sectoral development plans, policies and reports constitute baseline development strategies which have only superficially taken on-board stresses on natural and social assets that will likely be created by climate change. Overall the project will enable Burkina Faso to continue building its capacity to face climatic challenges.

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities

The links to the GEF LDCF focal area strategy were thoroughly described in the PIF and remain valid – hence, **not applicable (NA)** / will not be repeated here. They are included in PRODOC Chapter 2.2.1 LDCF conformity.

A summary of eligibility criteria and priorities is provided below. Refer to PRODOC Chapters; 2.2 Project Rationale and Policy Conformity and 2.3 Country Ownership: Drivenness and Eligibility for more details. Sub-chapter 2.3.2 Country eligibility provides an outline of how the project relates to NAPA priorities.

Burkina Faso is a UNFCCC party, a LDC and developed its NAPA in a participatory manner. The NAPA was published in November 2007 in accordance with the requirements outlined in the UNFCCC COP 7.

This proposed project responds directly and comprehensively to those urgent needs identified and expressed in the NAPA. More specifically, the project is aligned with NAPA priorities, first of all in terms of ‘sectors’ – i.e. the project addresses (i) terrestrial ecosystems; (ii) water resources; and (iii) food security sectors, which feature high among the 12 priority actions of the NAPA. Secondly, through demonstration activities on the ground under Component 2, the project addresses in different ways the following priority actions foreseen in the NAPA (noting that priorities 1 and 2 have been addressed through a previous LDCF project):

- **#3** on Restoration and management of the Mare d’Oursi (output 2.2)
- **#4** on Fodder production and development of fodder stocks for livestock in the Sahelian Region of Burkina Faso (outputs 2.1, 2.4 and 2.5)
- **#5** on Rehabilitation, sustainable management of natural vegetation, and “*valorization*” (or valuing) of Non-timber Forest Products in the Eastern region of Burkina Faso, though the focus of the present project is on Boucle du Mouhoun region (outputs 2.2 and 2.3)
- **#6** on Control of sand encroachment/mud silting in the river basins of Mouhoun, Nakanbé and Comoé (outputs 2.1 and 2.2)
- **#8** on Protection of pastoral-suited regions in the Sahelian and Eastern regions (outputs 2.4 in the BdM, but also 2.1, though the focus of the latter is on the MdO in the North)
- **#10** on Promoting community-based fauna management in the Mouhoun region (output 2.5 and 2.6)
- **#11** Implementation of safety zones and backup devices to control pollution of underground and surface water catchment infrastructures (lakes, wells, boreholes) in the cotton belts of Burkina (Mouhoun, South-West, Comoé and the Eastern part of Nakanbé) (outputs 2.2).

In this manner, the project is very well aligned with the NAPA and a direct response to the adaptation priorities contained in it.

A.3. The GEF Agency’s comparative advantage

NA (No changes since PIF approval.)

A.4. The baseline project and the problem that it seeks to address.

The UNDP PRODOC provides a country-specific analysis on underlying financial, economic and policy drivers behind the current situation of climatic vulnerability that prevails in the country and in the project zones in particular. The

project justification is underpinned by technical reports, contextual analysis and application of the AMAT (i.e. the LDCF/SCCF Adaptation Monitoring and Assessment Tool).

The problem that the project seeks to address is thoroughly described in the PRODOC, in particular in Part 1 – *Situation Analysis* and Part 2 – *Project Strategy*.

A summary of the overall strategy is provided in [Part I, Table B](#) of this document. It is outlined in narrative form below.

For an analysis of **the baseline project**, refer to PRODOC, Chapter 1.4 *Baseline Analysis*, which includes the following sub-chapters:

1.4.1 *The status quo of ecosystem management in project sites*

1.4.2 *Institutional response to climate variability*

1.4.3 *The project's development baseline*

Refers also other relevant sections and chapters in the PRODOC's background and strategy parts, in particular: Chapters 1.1 *Context*, 1.2 *Climate Change Context* and 1.3 *Threats, Root Causes, Barriers and Solutions*.

Burkina Faso is particularly vulnerable to climate change, given its socio-economic, climatic and geographical conditions. Firstly, it is one of the poorest countries in the world. Household poverty levels are known to fluctuate largely on resource availability, and notably by season and linked to limited rainfall and water availability. Secondly, the West African region is expected to experience amongst the greatest climatic impacts on the Sahel region (i.e. almost all of Burkina Faso). In particular, it is expected to experience the most challenging climatic changes in terms of temperature, rainfall, storms and extreme events. Thirdly, Burkina Faso's population and economy is largely dependent on primary food production and natural resources, namely the sectors that are the most susceptible to climate change. Hence, large parts of the population and the economy are involved in and dependent on the sectors most vulnerable to climate change, particularly women who make up the majority of the agricultural labor force. The current situation across large parts of Burkina Faso is one of slowly degrading natural resources and therefore declining resilience to climate change and climate variability.

Against this background, Burkina Faso is expected to face significant consequences from climate change, particularly to its scarce water resources, and impacting on its already highly vulnerable rural populations. The impacts of climate variability and change are felt so severely because livelihoods and production systems are so tightly linked to the availability of rain, and because other livelihood supports are not sufficiently developed to provide a viable alternative.

This project aims to reduce local communities' vulnerability to the additional risks posed by climate change and build their resilience. It focuses efforts on the natural resource management sectors in the Boucle du Mouhoun (BdM) Forest Corridor and in the Mare d'Oursi (MdO) Wetlands Basin. Both are landscapes of strategic importance with respect to water resources and livelihoods' systems. This offers a unique opportunity to build the intervention exactly on the natural resource dependency relationship that currently threatens the livelihoods.

An innovative combination of building natural and social assets at the local project zones level will be pursued, including through Ecosystem-based Adaptation (EBA) to climate change. It is recognized that the natural assets in the two project zones are critical to maintaining ecosystem functions especially related to water. As water resources are under particular threat by climate change and human-induced pressures their conservation is of particular concern to Burkina Faso.

The project will achieve its aim of reducing local communities' vulnerability to the additional risks posed by climate change first by expanding and disseminating the knowledge and understanding of climate variability and change-induced risks in the project targeted areas. Yet, a significant portion of the project will work at local levels in the BdM and MdO zones. Site-level interventions will strengthen the climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods. The practical approach will involve demonstration and up-scaling of ecosystem based adaptation methods. In addition, the project will integrate climate adaptive management of agro-ecological and hydrological systems into key sectoral planning and investment frameworks.

Since the project is pioneering for the region – the first EBA project financed by LDCF -- a great emphasis is placed on building a solid basis of evidence and on EBA practices, building stakeholders’ capacity and communicating lessons.

The PRODOC provides a focused proposal for how the project will achieve its objective and contribute to the GEF’s LDCF Focal Area Objectives and Outcomes.

A. 5. Incremental /Additional cost reasoning

The project seeks to reduce local communities’ vulnerability to the additional risks posed by climate change and build their resilience with focus on the natural resource management sectors in the Boucle du Mouhoun Forest Corridor and the Mare d’Oursi Wetlands Basin.

Three components are proposed as follows:

Component 1

Knowledge support platform on climate change impacts and risks

Expected Outcome: Increased knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system

Component 2

Vulnerability reduction and strengthening of resilience demonstrated in the management of natural and social assets in the BdM forest corridor (BdM) and the MdO wetlands basin

Expected Outcome: The climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO are strengthened by focusing on vulnerable natural and social assets in target project sites

Component 3

Climate change adaptation mainstreamed into local and regional development planning and finance

Expected Outcome: Climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin are integrated into key sectoral planning and investment frameworks with focus on local and regional levels

The development and financial baseline for each of the components, and the adaptation alternative facilitated by the project are thoroughly described in the PRODOC in Chapter 2.5 *Project Objective, Outcomes and Outputs/Activities*, which also presents how the expected outcomes will be achieved.

The Additional cost reasoning is presented in matrix form in PRODOC *Annex 5*, reproduced below.

Cost/Benefit	Baseline (B)	Alternative (A)	Project and Additional costs (A-B)
Outcome 1: Increase knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system	Various information sources but not utilized at sub-national level and not geared to EBA activities; limited translation of available information to decision-making purposes	<ul style="list-style-type: none"> - Development of SICOFORMO system within ONEDD: within existing data management systems and information sharing on environment and development via ONEDD; capacity for agro-sylvo-pastoral data management within DCIME (host of ONEDD); additional data gathering at sub-national level - Development of a co-supportive linked system at the two project zones: feeding into or benefiting from national data management and information sharing systems; benefiting from and building existing technical capacities and systems 	<p>LDCF + any co-financing mobilized beyond the baseline:</p> <p>\$ 1,034 K</p> <p><i>LDCF</i> \$ 1,034 K <i>Non-baseline co-financing</i> \$0</p>

Cost/Benefit	Baseline (B)	Alternative (A)	Project and Additional costs (A-B)
	Baseline Finance: \$ 13.1 million	Total costs of the alternative LDCF + Baseline + co-financing beyond the baseline TOTAL: \$ 14.4 million	
Outcome 2: Strengthen the climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO are by focusing on vulnerable natural and social assets in target project sites	Efforts to strengthen livelihoods not considering climate risks or adaptation needs Planning and finance not taking into account climate risks and adaptation potential, esp. at sub-national levels Baseline Finance: \$ 49.3 million	<ul style="list-style-type: none"> - Dissemination of ecosystem-based adaptation techniques and technologies, involving community in decision-making and building local capacity; on the basis of solid development and livelihoods investments, with which the project will collaborate and foster synergies. - Over time, the EBA model demonstrates a cost-effective way of building natural and social assets, many with multiple benefits; - Focus on women as major actors in the regions Total costs of the alternative LDCF + Baseline + co-financing beyond the baseline TOTAL: \$ 68.8million	LDCF + any co-financing mobilized beyond the baseline: \$ 9,950 K <i>LDCF</i> \$ 5,260 K <i>Non-baseline co-financing</i> \$4,990 K
Outcome 3: Integrate climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin into key sectoral planning and investment frameworks with focus on local and regional levels	Climate change adaptation is not sufficiently mainstreamed into key sectoral planning and investment frameworks Baseline Finance: \$33.5 million	<ul style="list-style-type: none"> - Engagement with local and regional authorities with respect to the decentralized planning and budgeting processes - Integration of this component with the national PEI program in a synergetic way. Total costs of the alternative LDCF + Baseline + co-financing beyond the baseline TOTAL: \$ 42.5 million	LDCF + any co-financing mobilized beyond the baseline: \$ 606 K <i>LDCF</i> \$ 0.406 K <i>Non-baseline co-financing</i> \$0.200 K
Project Management	n/a	Total costs of the alternative LDCF + co-financing beyond the baseline TOTAL: \$ 0.9 million	LDCF + mobilized co-financing: \$ 1,225 K <i>LDCF</i> \$ 7,000 K <i>Non-baseline co-financing</i> \$ 5,815 K
TOTAL	\$95.9 million	\$ 126.6 million	\$ 12,815 K

A.6. Risks

A more thorough risk analysis than that of the PIF has been carried out during the PPG. It is presented in PRODOC Annex 2: *Risk Analysis*, reproduced in summary form herein. Refer also PRODOC Table 8: *Risk Assessment Matrix*.

IDENTIFIED RISKS, CATEGORY AND RISK ASSESSMENT	MITIGATION MEASURES
<u>OPERATIONAL</u> Security and instability at the MdO	Proceed with the project as planned, utilizing security convoys for international visitors as required. Else, the project will follow appropriate instructions and applicable

IDENTIFIED RISKS, CATEGORY AND RISK ASSESSMENT	MITIGATION MEASURES
<p>project site, adjacent to rebel-held area of Mali.</p> <p><u>LEVEL:</u> <i>MEDIUM</i></p>	<p>protocols from the UN Department of Safety and Security (UNDSS). All project staff will undergo training in security in the field. Prior to any deployment, project staff, consultants and collaborators will apply for security clearance according to UNDSS procedures.</p>
<p><u>ENVIRONMENTAL</u></p> <p>The Mouhoun River continues to be heavily used upstream and there are now plans to build more dams to increase electricity production and expand irrigation in the basin. If unmitigated, the negative impacts of these infrastructural works could significantly decrease the positive impacts of EBA efforts</p> <p><u>LEVEL:</u> <i>MEDIUM</i></p>	<p>The project will engage early with the Volta Basin Authority (VBA) on raising their awareness on the possible negative impacts of planned works. It will in particular make sure that climate change impacts are duly introduced into the overall impacts assessments, by providing data and access to the maps and products from SICOFORMO. This will provide VBA a sounder basis for decision-making about water use in the basin and for evaluating options and alternatives, including EBA. It is possible that some of the planned works may be risky, expensive or even unfeasible, and that VBA would instead support an EBA approach in certain cases.</p>
<p><u>STRATEGIC</u></p> <p>Local communities and relevant groups of stakeholders (e.g. municipal authorities, community groups, NGOs, public entities) are not receptive to changing traditional practices that threaten the provision of agro-ecological and hydrological services and persist in using unsustainable methods.</p> <p><u>LEVEL:</u> <i>MEDIUM</i></p>	<p>The project will set up appropriate project implementation arrangements, with clear presence at BdM and MdO pilot sites (Activity 2.1.1). This will include the establishment and operationalization of appropriate local level participatory platforms for project execution, specifically considering gender dimensions. As a principle for community interaction a “farmers schools” approach to demonstrations will be applied, actively involving and putting into the drivers’ seat local communities and making them work together with regional extension personnel from various sectoral ministries. In the MdO, the project will support development of a plan to avoid overgrazing and overstocking during the dry season by regulating access to water and pasture resources. Yet, the plan would not be enforceable, if it is not collectively agreed upon with local sedentary communities and transhumant groups. The project will competitively select and engage a capable national CSO to work with local communities and transhumant groups in the MdO Wetlands Basin. The CSO’s role will be to facilitate the preparation and negotiation of the plan, until it becomes a by-law agreed upon by concerned resource users.</p>
<p><u>ORGANIZATIONAL</u></p> <p>Land use and tenure conflicts and conflicts among different interest groups (hunters, ranchers, transhumants, fuel wood collectors, etc.) may exacerbate current threat driven pressures on natural assets (e.g. demand for farm land, brush fires, grazing and fuel wood collection, etc.).</p> <p><u>LEVEL:</u> <i>LOW</i></p>	<p>It is assumed that baseline projects will, by and large, be dealing with current levels of pressure on agro-ecological and hydrological systems. Yet, these pressures may be exacerbated, including as a result of measures that this LDCF may attempt to introduce, e.g. to avoid overstocking or overgrazing, or to regulate the excessive extraction of forest wood, water abstraction etc. First, the project will deal with this risk, first by collaborating closely with other relevant initiatives (including baseline and co-financing), so that non-climatic stressors (e.g. overutilization of natural assets) are being minimally controlled. Secondly, the project will also introduce conflict resolution measures as part of the community consultation mechanisms to be established for participatory management of natural and social assets. The underlying agenda is to pre-empt conflict that could otherwise undermine project success and work towards consensus. A careful analysis of the stakes and of stakeholders with respect to long and short term benefits of different models of resource use and their implications for the provision of agro-ecological and hydrological services will be part of the project strategy.</p>
<p><u>POLITICAL</u></p> <p>Conflict in Kalio CF: Local communities strongly disapprove of the boundaries of this new conservation area, which has restricted their agricultural and pastoral activities. They might not wish to collaborate with the project.</p>	<p>An MoU will be developed with the concessionaires to engage with the project; some initial assessment will help to clarify the causes of the conflict and possible measures in response. Indicatively, special measures could include establishing better information on the zoning of the areas, determining what remediation measures should be put in place, considering the value of various land uses, etc. This should be conducted in line with internationally established good practice as well as UNDP normal policies.</p>

IDENTIFIED RISKS, CATEGORY AND RISK ASSESSMENT	MITIGATION MEASURES
<u>LEVEL:</u> LOW	
<u>STRATEGIC</u> Challenges (e.g. organization, capacity - e.g. 90% illiteracy amongst local officials) at the community level to sustainably manage the investment and results. <u>LEVEL:</u> HIGH	The project will work to build capacity at local level, including via the process of developing local adaptation plans. Capacity building through awareness-raising, training on climate change, their impacts and possible adaptation options, and close assistance to impulse climate resilient management at the community level is necessary. Project initiatives will be implemented through a close collaboration with local authorities and technical partners such as local civil society organizations. These technical partners will be key vehicles to test and validate pilot adaptation options as well as to disseminate best practices widely. Considerable effort must be invested into the proper design on knowledge products to ensure that they will in fact be useful and be applied.
<u>STRATEGIC</u> Challenges of communication especially as required for behavior change. In the area of the MdO particular, these activities are critical to project success. <u>LEVEL:</u> LOW	The project will develop, implement and maintain a communications strategy to ensure that all stakeholders are informed on an on-going basis about the project's objectives and activities; overall project progress; and the opportunities for involvement in various aspects of the project's implementation. The project is looking for innovative and locally suitable communication channels to disseminate information esp. as related to behavior change, e.g. the existing daily radio shows on environmental affairs.

A.7. Coordination with other relevant GEF financed initiatives

NA (no changes since PIF).

Else, refer to PRODOC Table 15 - *Summary of main synergies with related projects and programs.*

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE

B.1 Stakeholder engagement in project implementation

A thorough stakeholder engagement plan is included in the PRODOC.
 Refer to PRODOC Chapter 2.10 *Stakeholder Involvement* and Annex 6: *Detailed Stakeholder Involvement Matrix.*

B.2 Socio-economic benefits at the national and local levels, including gender dimensions considerations

And how these will support the achievement of global environment / adaptation benefits

A thorough analysis of benefits and gender is included in the PRODOC.

Refer to PRODOC Chapter 2.11 *Expected benefits, including socio-economic*, reproduced below.

The gender dimension is fully integrated into the PRODOC, in particular in the description of activities.
 For a specific discussion of the gender topic, refer to Chapter 1.1.5 *Culture and gender*. Excerpts from that chapter and other passages from the PRODOC are reproduced below.

In addition, UNDP carried out due diligence prior to PRODOC clearance and screened the project for potential social and environmental negative effects. Refer to PRODOC Chapter 2.12 *Safeguards* for a presentation of [the UNDP Environmental and Social Screening](#) applied in February 2014.

Development benefits

Burkina Faso will count on a tailor made geo-based system specifically for analyzing climate risk and climatic vulnerabilities linked to the management of natural and social systems.

National capacity for dealing with climate risk and addressing climate driven/exacerbated vulnerabilities will be enhanced, not just through the development and use of the system, but also through the training of national and provincial planners in the application of products from the system.

Capacity of local stakeholders in the project zones to perceive climate risk and to implement and cost adaptation measures in natural resource management activities and livelihoods development will be significantly enhanced, in particular with respect to the management of wetlands, forests, pasture, fire, hydrological systems and agro-sylvo-pastoral production systems.

National capacity for mainstreaming climate change adaptation into sectoral planning and investment frameworks with focus on local and regional levels will be increased.

Collaboration frameworks and partnerships for adaptation with respect to the BdM Forest Corridor and the MdO Wetlands Basin will be consolidated.

Overall adaptation learning will be enhanced by the dissemination of the project's experience.

In the short- to medium-term, this project supports national development goals and plans to achieve **Millennium Development Goals (MDGs) 1, 3, and 7:**

- **MDG 1: Eradicate extreme poverty and hunger** – At least 150,000 people are dependent on forestry, freshwater fishing, livestock rearing, agriculture and small game hunting for their livelihoods in both in the BdM Forest Corridor and in the MdO Wetlands Basin. The LDCF portion of the project will finance the additional costs of maintaining natural assets and related agro-ecological and hydrological services essential to local livelihoods in the face of climate change, including increased climatic variability. In doing so, the overall project will reduce vulnerability to poverty and hunger by generating socio-economic benefits at the national and local levels. The livelihoods-focused outputs 2.5 and 2.6 will bring immediate socio-economic benefits to farmers involved in the introduction of polyculture and adaptive agro-ecological production systems in communal lands. While, due to the demonstration character of the activities, these benefits are likely to be of limited scope, the project strategy is slated to bring longer-term socio-economic benefit to involved communities, as opposed to the more short-term ones based on the rapid depletion of natural assets.
- **MDG 3: Promote gender equality and empower women** – Women are a very important group under this project; they are the ones frequently left as heads of households while men migrate for employment. Their role in the management and protection of natural assets (water, forests, fish and wildlife) is critical, though they do not often retain the rights to these resources their importance in managing would suggest. Furthermore, women, children and the elderly are frequently amongst the more vulnerable of the poor, and lacking opportunities for wage-based employment. In the face of climate change, their vulnerability will likely be exacerbated. Hence, women will not only be a key beneficiary of adaptation measures under this project, but they will also play a protagonist role in promoting the mainstreaming of adaptation measures in the local economy. Furthermore, project indicators will be broken-down by gender where applicable and gender concerns incorporated in the planning of specific activities.
- **MDG 7: Ensure environmental sustainability** – The project will ensure a transition to a much more rational use of natural assets and the long-term maintenance of a stream of agro-ecological and hydrological services associated with it, including through adequate landscape-level planning frameworks. Sustainability of water resources in this water scarce project are emphasized; and in some cases the root causes are linked to potable water and sanitation at local level (especially around the MdO).

The project will make a define contribution to women’s empowerment at the local level, defined as the “sum total of changes needed for a woman to realize her full human rights – the combined effect of changes in her own aspirations and capabilities, the environment that surrounds and conditions her choices, and the power relations through which she negotiates her path.”⁴ In other words, agency, relations and structures - the project will make a contribution to all three dimensions:

Other co-benefits

Relations: Power relations through which she negotiates her path

Examples:

- Being involved in local decision-making processes
- Getting recognized (by external groups) as an important stakeholder in natural resource management and adaptation
- Having their issues and ideas heard through a local adaptation process (using good practice in participation)

Agency: Changes in her own aspirations and capabilities

Examples:

- Knowledge of climate trends
- Access to appropriate measures (incl. technologies) for adaptation
- Access to income-generating employment via the HIMO approach; and, when women are able to earn an income, their families are more likely to benefit

Structures: Environment that surrounds and conditions her choices

Examples:

- Gender equitable adaptation planning at local level (and support from national and regional level to implement these plans)

Medium to long-term societal benefits catalyzed by the project will include increased land productivity and yields for both cash (e.g. cotton) and food crops (sorghum, maize, millet, groundnuts and cowpea), increased fish catch, availability of water resources to livestock throughout the year in places where water is scarce, expanded grazing grounds, increased tourism revenue (where applicable), more varied and expanded availability of forest resources, reduced fire risks, among others. Considering that resource-depleting strategies may make economic sense in the short run under certain circumstances, it will be key for the project’s success to not just enforce the pursuit of long-term benefits, but also to create incentives for the realization of these benefits.

Under increasingly variable climate scenarios, short-sighted practices that degrade agro-ecological and hydrological systems will make less economic sense and the benefits of maintaining and enhancing resilience will be and increasingly cost-effective adaptation strategy that not only maintains, but also increases socio-economic benefits.

Gender dimensions

Women are constrained in their farming by the internal organization of the family. They do not fully control their own labor time, and they have limited access to other family member’s labor. This limits their possibility to handle labor-bottlenecks and keep up the timeliness of operations. They have limited access to manure because the manure produced within the farming unit is most likely to be used in the family field. If the husband possesses an ox-plough he may plow her field, but only after work on the family field has been done. The agricultural extension services have only recently started to address women directly, and most women do not receive any information about new farming techniques.⁵

Many descriptions of gender roles (including the above) are simplified and do not capture the fact that the gendered division of labor is constantly renegotiated in response to new situations and economic necessity. Women have also

⁴ As defined by Care International. See CARE International Climate Change Brief: Adaptation, gender and women’s empowerment [[Link](#)] (Accessed on 10 Jan 2014).

⁵ Evenson R and Siegel M (1999). Gender and Agricultural Extension in Burkina Faso. *Africa Today* 46(1): 75-92.

taken on new tasks and responsibilities, and more rights exist at least on paper than at any time before. It's difficult to capture here various possible scenarios or contexts that gender relations can take place; we try to handle gender issues throughout the document.

Women are considered a 'more vulnerable' group in the project context. In this light, the project emphasizes (i) investments at community level to ensure benefits to poor and marginalized communities, and (ii) gender empowerment, through the mainstreaming of gender concerns across all activities. As a key design principle, the project is participatory, transparent, accountable, and culturally appropriate, while actively embracing equity and gender issues.

Details for monitoring and evaluation will be articulated during the project development phase. In order to better address gender issues, where possible, indicators will be gender disaggregated.

In particular, under Component 2, the following applies to the gender dimension:

Local adaptation planning will utilize good practices in participation and use a 'gender-transformative' approach. The inequitable distribution of rights, resources and access to social goods – as well as some cultural rules and norms – result in highly asymmetrical relationships of power between men and women. This constrains the ability of many women to take action on climate change.

However, poor and marginalized men often contend with similar constraints vis-à-vis other relationships of power. Therefore, adaptation approaches pioneered by NGOs such as Conservation International and CARE includes 'empowering' both women and men to challenge and change deeply rooted inequalities. These efforts are characterized as 'gender-transformative activities', which strive to examine, question and change rigid gender norms and imbalances in power relationships in order to increase people's resilience.

Gender transformative activities encourage critical awareness among men and women of gender roles and norms; promote the position of women; challenge the distribution of resources and allocation of duties between men and women; and/or address power relationships between women and others in the community, such as service providers or traditional leaders.⁶

Gender marking will apply to this project. Refer to PRODOC Chapter 3.1 *Programmatic Links* for further details.

B.3. Cost-effectiveness reflected in project design

Cost-effectiveness is enshrined in the project strategy and its choices since Work Programme entry. The cost effectiveness analysis has been further developed during the PPG and it is incorporated in the PRODOC.

For a summary, refer to PRODOC Chapter 2.7 *Cost-Effectiveness*, which is reproduced herein.

A number of design options were considered for the project before the final design was proposed. Narrative detail per outcome follows. See also PRODOC Annex 5 *Additional Cost Analysis*.

Under Outcome 1: Two outputs are mentioned (1.1 and 1.2).

Regarding output 1.1, the cost effectiveness of the system developed by the project is assured by:

⁶ Aguilar L (2009). Training Manual on Gender and Climate Change, IUCN, UNDP and GGCA, Gland, Switzerland. CARE (2010). Adaptation, gender and women's empowerment. CARE International Climate Change Brief. Available from: http://www.careclimatechange.org/files/adaptation/CARE_Gender_Brief_Oct2010.pdf. (Accessed November 2013.)

- Developing the SICOFORMO system a sub-component of the existing ONEDD system
- Working from Dori and Dédougou as the two project sites for IT-related affairs as they are well linked to the Internet, transportation links and other networks.

Furthermore, these two centers are already participating in the Network for improved environmental information management (RIDEB)

The ONEDD system is managed by the project’s executing agency, which already hosts the necessary servers and have management and technical staffing to oversee and support the project. The SICOFORMO development here further positions DCIME as the center of coordination for existing and newly emerging information systems

Regarding output 1.2, a stakeholder needs assessment will ensure products are well targeted to needs, and for example low cost options are explored. The project is looking for innovative and locally suitable communication channels to disseminate information, e.g. the existing daily radio shows on environmental affairs. Training materials will be developed which do not rely on holding a training event.

Under Outcome 2: Planning and priority-setting activities under Output 2.1 contribute to the improved targeting of adaptation measures and increase the likelihood that measures will minimize costs. Furthermore the project is working very closely with government and extension services, trying to strengthen the mechanisms that are already in place. The measures under Component 2 are designed to strengthen donor coordination and more generally coordination amongst actors at a regional scale. Finally, the project has selected only two demonstration areas, minimizing logistics and other costs of engagement. The two areas are indeed quite large and can have a wide strategic impact (especially regarding water resources); at the same time developing outputs that can be adapted elsewhere.

Ecosystem-based adaptation approaches deliver a range of benefits and co-benefits. This puts it in an advantageous cost-benefit situation when compared to other solutions to climate change (e.g. infrastructural). By considering the need for performance data at the outset of the intervention, the project evaluation framework (see Section 3) is structured to collect relevant information. Collecting data on the cost benefit of EBA approaches will provide the evidence base for more targeted investments now and in future.

Under Outcome 3: The project’s third component relies heavily on the situation of the project in SP-CONEDD, benefiting from access to other projects and strategic, planning, and investment processes.

As compared to other options, including non-EBA, the proposed alternative stands out as the most cost-effective and confirms the strategic choices made at concept/PIF stage.

C. BUDGETED M & E PLAN

The project’s M&E Plan is thoroughly described in the PRODOC Chapter 6 - *Monitoring Framework and Evaluation*. For more detail, refer to *Monitoring and Evaluation Plan and Budget*. The table below provides a summary.

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Inception Workshop and Report	Project Manager PIU (Project Implementation Unit) UNDP CO, UNDP GEF	Indicative cost: \$20,000	Within first two months of project start up with the full team on board
Measurement of Means of Verification of project results.	UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
	to relevant team members. PIU, esp. M&E expert		
Measurement of Means of Verification for Project Progress on output and implementation	Oversight by Project Manager PIU, esp. M&E expert Implementation teams	To be determined as part of the Annual Work Plan's preparation. Indicative cost is \$50,000	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	Project manager PIU UNDP CO UNDP RTA UNDP EEG	None	Annually
Periodic status/ progress reports	Project manager and team	None	Quarterly
Mid-term Review	Project manager PIU UNDP CO UNDP RCU External Consultants (i.e. evaluation team)	Indicative cost: \$44,000	At the mid-point of project implementation.
Terminal Evaluation	Project manager PIU UNDP CO UNDP RCU External Consultants (i.e. evaluation team)	Indicative cost : \$44,000	At least three months before the end of project implementation
Audit	UNDP CO Project manager PIU	Indicative cost per year: \$3,000 (\$18,000 total)	Yearly
Visits to field sites	UNDP CO UNDP RCU (as appropriate) Government representatives	For GEF supported projects, paid from IA fees and operational budget	Yearly for UNDP CO, as required by UNDP RCU
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 172,000 (+/- 2.5% of total LDCF budget)	


PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S)

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mr. Mamadou Honadia	GEF Operational Focal Point	Ministry of Environment and Sustainable Development	April, 16, 2012

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Adriana Dinu Executive Coordinator and Director, a.i., , UNDP/GEF		March 24, 2014__	Fabiana Issler Regional Technical Advisor, Ecosystems & Biodiversity, Africa, UNDP-GEF	+251-911- 432003	fabiana.issler@undp.org



ANNEX A: PROJECT RESULTS FRAMEWORK

(Either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Refer to specific sections and pages in the PRODOC for the Project Results Framework:

Chapter 3:	<u><i>Project Results Framework</i></u>	page 91- 96
	3.1 <u><i>Programmatic Links</i></u>	
	3.2 <u><i>Logframe</i></u>	

ANNEX B: RESPONSES TO PROJECT REVIEWS

(From GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Comments	Responses	Document reference
<i>US Comments from August 17, 2010</i>		
The United States welcomes this project concept. With a view toward furthering strengthening the proposal, we would like to request that the Agency, as it prepares the proposal for CEO endorsement, provide a few clarifications and additional details:		
<p>Production of climate, agro-ecological and hydrological information is very important. It is unclear from the PIF, however, what the specific gaps and needs are in Burkina Faso. We request the Agency to provide more description of the content, operation and products that the information system will provide – as well as of the capacity of data producers to provide this information.</p>	<p>Based on field visits and baseline analyses, it was possible to establish the linkages between climate information and livelihoods at risk in the project zones. These linkages pertain e.g. to the growth cycle of crops, to forest and grasslands dynamics, to hydrological systems, fire regimes, etc. They were further investigated in the PPG studies.</p> <p>The Baseline Analysis (PRODC Chapter 1.4) and the Barrier Matrix (PRODOC Annex 1) provides an excellent summary of the gaps and needs identified during the PPG phase, including of the capacity of data producers to provide this meaningful climate information and to gear the indicators appropriately to different user groups.</p> <p>These analyses helped shape the approach to Component 1, which covers the SICOFORMO and its use. In the PRODOC, the description of operation and products that the mentioned information system will yield is much more developed than at PIF stage. Refer to descriptions Outputs 1.1 and 1.2.</p> <p>More detail in response to this question is also provided in the ICT report (Traore 2013) from the PPG phase (see PRODOC Annex 8)</p>	<p>PRODOC, Annexes 1 and 8</p> <p>Description of Outputs 1.1 and 1.2.</p>
<p>It is important to involve users in the design of the information (and not assume that producers know what type of information users need). We therefore request the Agency to provide a description of how the project will try to ensure that the production of information is driven by the needs of the</p>	<p>Considered fully in the project design via Activity 1.2.2 - Undertake stakeholder information needs assessment and scope relevant designs of knowledge products and Activity 1.2.3 - Develop relevant knowledge products and application support.</p> <p>Furthermore, DCIME has extensive experience in stakeholder involvement for the production and consumption of data and information. ONEDD is supported by give-and-take relationships with a network of partners located</p>	<p>PRODOC, description of Output 1.1</p>

Comments	Responses	Document reference
<p>users and delivered through appropriate user-friendly channels.</p>	<p>all levels in municipalities and regions, as well as national and international levels.</p> <p>Project Component 1 also includes specific provisions (in Activity 1.1.3) to ensure that information be utilized directly for decision-making purposes and not be lost into a large information system that shows no specific application context on the local and regional level.</p>	
<p>In addition, the proposal would benefit from a clearer explanation about how local communities and women will be involved in shaping the new policies and programs proposed in this project.</p>	<p>The project will enable women to shape the policies and programs via the development of local adaptation plans using good practice in participation. It is recognised that women are the "constant" inhabitants of the project sites as men migrate with cattle or for wage-based employment. Detail under Activity 2.1.1 provides elaboration.</p> <p>Refer also to the discussions on gender considerations in this document, Part II, Section B.2 (<i>Socio-economic benefits at the national and local levels, including gender dimensions considerations</i>).</p>	<p>PRODOC, description of Activity 2.1.1</p> <p>CEO Endorsement Request, Part II, Section B.2</p>
<p>The agency does not mention Burkina Faso Meteorological Department (BMD), the authorized entity in the country to monitor and forecast climate and weather information and to provide agro-meteorological services. We request that the Agency consider strengthening existing capacities, such as that of BMD, rather than developing a new potentially parallel system.</p>	<p>SP/CONEDD is a transverse structure with a mandate to ensure the integration of environmental concerns into sectoral policies and to avail for all actors, reliable information for environmental monitoring and planning in the management of natural resources. It is for this purpose that ONEDD has been developed, and it fits within this mission to build the system SICOFORMO from the ONEDD, especially as it has many of the same actors, the same data and why not the same collaboration protocols.</p> <p>SICOFORMO would involve data on hydrology, natural resources (forests, wetlands, water, climate, etc.) while the BMD handles the only climatic data (temperature, rainfall, wind, ETP, etc.). BMD does not aim or handle or manage data on water, soil, forests, etc. Other national organizations handling such data do exist (Directorate General of Water Resources , Department of Forestry, National Bureau of Soils, the National Institute of Statistics and Demography – INSD, etc.), and are all members of the PNGIM network (hosted by DCIME, as below). BMD is also a member of the PNGIM since its inception.</p> <p>DCIME (host of ONEDD) has considerable advantages vis-a-vis BMD:</p> <ul style="list-style-type: none"> - Its role as coordinator and facilitator of the network of information 	<p>PRODOC, description of Outputs 1.1 and 1.2.</p>

Comments	Responses	Document reference
	<p>producers (PNGIM) at national level (as above);</p> <ul style="list-style-type: none"> - Its role as coordinator and facilitator of the environmental information and documentation network for Burkina (RIDEB) - comprising 23 documentation centers that have signed an information charter and adopted the same methodology. Dédougou and Dori (regional administration centres for the project zones) are members of this network of information; - The acquisition in 2012 and ongoing management of a high performance server connected to a dedicated line which serves as processing, storage and dissemination of environmental and climate data. - Receiving station for national satellite images (AMESD) since October 2010. All these are assets for the SP / CONEDD to host and manage such an information system. 	
<p>We request the Agency to articulate the link more strongly between Components 1 and 2, e.g., how information generated from Component 1 will inform decision-making about adaptation options under Component 2.</p>	<p>The information will be used specifically in the development of local adaptation plans. This is primarily described in the following activities in a comprehensive manner:</p> <p>2.1.1 Set up appropriate project implementation arrangements, with clear presence at BdM and MdO pilot sites</p> <p>1.2.1: Develop and implement capacity development plan with regional (Ouagadougou, Dori and Dédougou) and local level (BdM and MdO) for decentralized application and operationalization of information system.</p> <p>1.2.2. Undertake stakeholder information needs assessment and scope relevant designs of knowledge products to be generated from the geo-based agro-ecological and hydrological information system so that they will be actively used by regional planners, local commune leaders and local resource managers for NRM planning and budgeting and for guiding the sighting and planning of adaptation activities in Component 2; complement knowledge products with relevant guidance and lessons learnt stemming from the demonstration projects in Component 2.</p> <p>1.2.3. Develop relevant knowledge products and application support, including through relevant trainings and outreach activities.</p> <p>1.2.4. Track application and success of knowledge products.</p>	<p>PRODOC, description of Activity 2.1.1 and of activities under Output 1.2</p>

Comments	Responses	Document reference
	The latter is slated to provide adaptive feedback to the project on the effectiveness of the system from a user and planning perspective.	
Finally, we ask that the Agency clarify the co-financing commitment. There seems to be some inconsistency. In Table A and B, the Agency notes indicative co-financing of \$21,407,000. However, in subsequent narrative sections, B.1 and B.2, reference is made to co-financing of some \$71-80 million.	The calculation mistake was in fact corrected in the re-submission version of the PIF and not carried over to the PRODOC, for which a careful baseline and co-financing analysis has been carried out. Numbers have been carefully checked.	CEO Endorsement Request, Part I, Section B1 and B2.
<i>Germany's Comments from August 16, 2010</i>		
[...] 2. In the outline for the baseline for Component 2 of the PIF, a large amount of "business-as-usual development efforts" are described. In order to increase the benefit derived from the data and information proposed to be generated in this PIF, Germany proposes to include also the project developers/managers operating projects in the target sites (e.g. UNDP PTMF or PNGT2 as described in the Baseline for Component 2) in the capacity building activities in Component 1.	In the description of Output 1.2, which refers to training and capacity building, we include the following formulation: "[...] in order to enhance the replication aspect of the project, managers and leaders from baseline initiatives dealing with land, forests and water will also be invited to benefit from the training."	PRODOC, description of Output 1.2
GEF Secretariat – Review Sheet dated 19 Jul 2013		
<u>Project Consistency</u>		
<i>10. Does the proposal clearly articulate how the capacities developed, if any, will contribute to the sustainability of</i>		

Comments	Responses	Document reference
<p><i>project outcomes?</i></p> <p>By CEO endorsement, please elaborate concerning the sustainability of project outcomes.</p>		
<p><u>Project Design</u></p>		
<p><i>13. Are the activities that will be financed using GEF/LDCF/SCCF funding based on incremental/additional reasoning?</i></p> <p>[...]</p> <p>Update 6/11/2012: Please ensure that at CEO Endorsement no adaptation projects are included in the baseline or cofinancing.</p>	<p>The PRODOC prepared at CEO Endorsement stage is fully consistent with the recommendation, which had also been addressed at PIF stage.</p> <p>Refer to PRODOC sub-chapter '<i>Other relevant national and regional related initiatives that already address the climate problem</i>'. Various programmes, financed by GEF and other financiers, are mentioned in it. The project will collaborate with them and seek synergies. However, these programmes are neither part of the baseline nor of the co-financing proposed.</p> <p>Note that initiatives such as AMESD and CORDEX contribute to availing climate data. They are useful tools for adaptation, but are not, in and on themselves adaptation programmes. They were considered as part of the baseline (though not co-financing).</p>	<p>PRODOC chapters:</p> <p>1.4.3 The project's development baseline</p> <p>Sub-chapter 'Other relevant national and regional related initiatives that already address the climate problem' (under PRODOC Chapter 1.4.2 Institutional response to climate variability)</p>
<p><i>16. Is there a clear description of: a) the socio-economic benefits, including gender dimensions, to be delivered by the project, and b) how will the delivery of such benefits support the achievement of incremental/additional benefits?</i></p> <p>Yes, for this stage.</p> <p>By CEO endorsement, please provide further details.</p>	<p>A thorough analysis of benefits and gender is included in the PRODOC.</p> <p>Refer to PRODOC Chapter 2.11 <i>Expected benefits, including socio-economic</i>, reproduced below.</p> <p>The gender dimension is fully integrated into the PRODOC, in particular in the description of activities.</p> <p>For a specific discussion of the gender topic, refer to Chapter 1.1.5 <i>Culture and gender</i>. Excerpts from that chapter and other passages from the PRODOC are reproduced below.</p> <p>In addition, UNDP carried out due diligence prior to PRODOC clearance and screened the project for potential social and environmental negative effects. Refer to PRODOC Chapter 2.12 <i>Safeguards</i> for a presentation of the <u>UNDP Environmental and Social Screening</u> applied in February 2014.</p>	<p>CEO Endorsement Request Part II, Section B.2</p> <p>All PRODOC chapter referred herein</p>

Comments	Responses	Document reference
<p><i>19. Is the project consistent and properly coordinated with other related initiatives in the country or in the region?</i></p> <p>Yes, the project explains the coordination efforts with other active development and climate initiatives in BF, including the project under preparation in the country, by FAO.</p> <p>Recommended Action 6/19/2012: By CEO Endorsement, please ensure full consistency and complementarity of the project, particularly Component 1, with other LDCF Initiatives on related topics. Furthermore, by CEO Endorsement, please ensure to provide full cost-effectiveness evidence, including that of Component 1, currently estimated at USD 1 million of LDCF grant funding.</p>	<p>A thorough analysis of baseline and other related initiatives, including the synergies that the project will seek to developed is included in the PRODOC</p> <p>Refer in particular to PRODOC Table 14 for a <i>Summary of planned stakeholder involvement as per Outcomes and Outputs</i> and Table 15 - <i>Summary of main synergies with related projects and programs</i>. Both are in PRODOC Annex 6: <i>Detailed Stakeholder Involvement Matrix</i></p> <p>In addition, refer to PRODOC Chapter 1.4.3 <i>The project's development baseline</i>, where the different initiatives are described and to the description of the specific baseline for each of the components, where the relationship to the LDCF intervention is also discussed, including relationships of consistency and complementarity.</p> <p>Finally, in PRODOC Chapter 2.7 <i>Cost-Effectiveness</i>, a thorough discussion of the full cost-effectiveness evidence is presented, including broken-down per component.</p> <p>This is also reproduced in this document, Section B3.</p>	<p>CEO Endorsement Request Part II, Section B.3</p> <p>All PRODOC chapter referred herein</p>
<u>Recommendation at PIF Stage</u>		
<p><i>31. Items to consider at CEO endorsement/approval.</i></p> <p>Please take note of recommendation under 19.</p>	<p>See above.</p> <p>All other comments addressed as per this matrix.</p>	<p>As above</p>

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

A. DETAILED FUNDING AMOUNT OF PPG ACTIVITIES AND FINANCING STATUS

PPG Grant Approved at PIF: \$120,000

<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Project scope and strategy defined, and LDCF full proposal documentation prepared and approved	120,000.00	60,178.33	59,821.67
Total	120,000.00	60,178.33	59,821.67

If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (IF NON-GRANT INSTRUMENT IS USED)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

NA



Empowered lives.
Resilient nations.



United Nations Development Program
Government of Burkina Faso
Global Environment Facility

PROJECT DOCUMENT
English version

Adapting natural resource dependent livelihoods to climate induced risks in selected landscapes in Burkina Faso: the Boucle du Mouhoun Forest Corridor and the Mare d’Oursi Wetlands Basin

GEF ID: 4971

UNDP-GEF PIMS: 4598

Atlas Award and Project ID: 00089466/ 00079493

Brief Description

Burkina Faso is expected to face significant consequences from climate change, particularly to its scarce water resources, and impacting on its already highly vulnerable rural populations. The impacts of climate variability and change are felt so severely because livelihoods and production systems are so tightly linked to the availability of rain, and because other livelihood supports are not sufficiently developed to provide a viable alternative. This project aims to reduce local communities’ vulnerability to the additional risks posed by climate change and build their resilience. It focuses efforts on the natural resource management sectors in the Boucle du Mouhoun (BdM) Forest Corridor and in the Mare d’Oursi (MdO) Wetlands Basin. Both are landscapes of strategic importance with respect to water resources and livelihoods’ systems. This offers a unique opportunity to build the intervention exactly on the natural resource dependency relationship that currently threatens the livelihoods. An innovative combination of building natural and social assets at the local project zones level will be pursued, including through Ecosystem-based Adaptation (EBA) to climate change. It is recognized that the natural assets in the two project zones are critical to maintaining ecosystem functions especially related to water. As water resources are under particular threat by climate change and human-induced pressures their conservation is of particular concern to Burkina Faso. The project will achieve its aim of reducing local communities’ vulnerability to the additional risks posed by climate change first by expanding and disseminating the knowledge and understanding of climate variability and change-induced risks in the project targeted areas. Yet, a significant portion of the project will work at local levels in the BdM and MdO zones. Site-level interventions will strengthen the climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods. The practical approach will involve demonstration and up-scaling of ecosystem based adaptation methods. Finally, the project will integrate climate adaptive management of agro-ecological and hydrological systems into key sectoral planning and investment frameworks. Since the project is pioneering for the region – the first EBA project financed by LDCF -- a great emphasis is placed on building a solid basis of evidence and on EBA practices, building stakeholders’ capacity and communicating lessons.

[Link to UNDP Strategic Plan \(2014-2017\)](#) [[Link](#)]

Primary Outputs:

(1.3) National development plans to address poverty and inequality are risk resilient (including risks from climate change and economic shocks)

(2.3) Solutions at local level for sustainable management of natural resources, ecosystems and environmental services, for expanded jobs and livelihoods.

Secondary Outputs: [From UNDP's *Biodiversity and Ecosystems Global Framework 2012-2020*:] [[Link](#)]

(*Signature Program #3*): Managing and rehabilitating ecosystems for adaptation to and mitigation of climate change.

UNDAF 2011-2015 Outcome(s):

Outcome 1: Accelerated, sustainable and pro-poor economic growth

Output 1.4: National and grassroots structures practice an integrated approach to sustainable management of natural resources and take into account the effects of changes climate through adaptation and mitigation

Expected CP 2011-2015 Outcome(s): [derived from UNDAF]

(1) Contribute to achieving the MDGs and reducing poverty

Expected CPAP Outputs:

(1.4) National and grassroots entities practice an integrated approach to sustainable development and natural resource management.

[Project Objective]: To reduce local communities' vulnerability to the additional risks posed by climate change and build their resilience with focus on the natural resource management sectors in the Boucle du Mouhoun Forest Corridor and the Mare d'Oursi Wetlands Basin.

[Project Outcomes]: (1) Knowledge support platform on climate change impacts and risks; (2) Vulnerability reduction and strengthening of resilience demonstrated in the management of natural and social assets in the Boucle du Mouhoun Forest Corridor (BdM) and the Oursi Wetlands Basin (MdO) **and** (3) Climate change adaptation mainstreamed into local and regional development planning and finance.

Implementing Entity: Ministry of the Environment and Sustainable Development, Permanent Secretariat for the National Advisory on the Environment and Sustainable Development (SP / CONEDD)

Implementation Period:	2014 – 2019
Financial Overview:	Managed in Atlas: LDCF: \$7,000,000 UNDP: 155,000*
Total project: \$37,672,541	Allocated by central government in the State's budget in local currency (MEDD): Equivalent to: \$770,000*
- LDCF**: \$7,000,000 - Co-financing: \$30,672,541	
	Other co-financing to the LDCF project: \$ \$29,747,541*

* Serve as co-financing to the GEF LDCF project. ** Excludes PPG amounts.

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List of Acronyms and Abbreviations

AAP	Africa Adaptation Program
AfDB	African Development Bank
AGRHYMET	Regional Centre for Training and Application of Agrometeorology and Operational Hydrology
ALM	Adaptation Learning Mechanism
AMESD	Environmental Monitoring for Sustainable Development in Africa
APFLN	National Agency for the Promotion of Non-Timber Forest Products
ATARAN	<i>Alliance Technique Assistance au Développement</i>
BdM	Boucle du Mouhoun
BKF	Burkina Faso (occasionally used)
CCA	Climate Change Adaptation
CIF	Climate Investment Fund
CF	Classified Forests (<i>forêts classées</i>)
COGEL	Consolidation of the Local Environmental Governance
COP	Conference of the Parties
CORDEX	Coordinated Regional Climate Downscaling Experiment
CSO	Civil Society Organization
DCIME	Division for skills development in environmental information management and monitoring (of SP/CONEDD)
DGM	General Directorate for Meteorology
EBA	Ecosystem Based Adaptation
DNSE	National environmental monitoring device
GCM	General Circulation Model
GGWSSI	Great Green Wall for the Sahara and the Sahel Initiative
GEF	Global Environment Facility
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
LDC	Least Developed Country
LDCF	Least Developed Country Fund (GEF)
MAHRH	Ministry of Agriculture, Hydraulics and Fisheries Resources
MASA	Ministry of Agriculture and Food Security
MRAH	Ministry of Animal and Fishery Resources
MCC	Millennium Challenge Corporation
MDB	Multilateral Development Bank
MdO	<i>Mare d'Oursi</i>
MEDD	Ministry of Environment and Sustainable Development
NAPA	National Adaptation Plan of Action
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-Governmental Organization
OFINAP	National Office for Protected Areas
ONEDD	National Observatory for Environment and Sustainable Development
PAGIRE	Integrated Water Resource Management Plan of Action
PCD	Community Development Plans
PIF	Project Information Form
PLCE	<i>Programme pour la Lutte Contre l'Ensemblement</i>
PNGIM	National program for the management of information on the environment
PPG	Project Preparation Grant
PRD/BHM	Regional Development Program for the Boucle du Mouhoun
PRSP	Poverty Reduction Strategy Paper
RDS	Rural Development Strategy
RIDEB	Network for improved environmental information management
SAGE	Sub-Basins Water Resource Management Master Plans
SDAGE	Master Plans for the Development and Management of Water Resources
SICOFORMO	Proposed GIS sub-component of ONEDD for the BdM and MdO sites
SNIEAU	National Water Information System

SP-CONEDD Permanent Secretariat for the National Council for Environment and Sustainable Development
SRGSD Strategy for Rapid Growth and Sustainable Development
ToR Terms of Reference
UNCDF United Nations Capital Development Fund
UNFCCC United Nations Framework Convention on Climate Change
VREO Program for Harnessing Water Resources in Western Region
PNGT2 National Land Management Program Phase II

1 Situation Analysis

1. Burkina Faso is particularly vulnerable to climate change, given its socio-economic, climatic and geographical conditions. Firstly, it is one of the poorest countries in the world. Household poverty levels are known to fluctuate largely on resource availability, and notably by season and linked to limited rainfall and water availability. Secondly, the West African region is expected to experience amongst the greatest climatic impacts on the Sahel region (i.e. almost all of Burkina Faso). In particular, it is expected to experience the most challenging climatic changes in terms of temperature, rainfall, storms and extreme events. Thirdly, Burkina Faso's population and economy is largely dependent on primary food production and natural resources, namely the sectors that are the most susceptible to climate change. Hence, large parts of the population and the economy are involved in and dependent on the sectors most vulnerable to climate change, particularly women who make up the majority of the agricultural labor force. The current situation across large parts of Burkina Faso is one of slowly degrading natural resources and therefore declining resilience to climate change and climate variability.
2. We observe the following tendencies within this context: (i) important negative impacts on food security; on migration of people and cattle to more promising areas – or out-migration of men seeking employment, leaving women, children and the elderly more destitute; (ii) more labor is increasingly required to produce food and obtain water, in spite of technological advances that counteract this, but which often have limited penetration in backcountry areas; (iii) this previous trend affects women the most, as they are in charge of supplying the household with food and water, and they often decrease their own intake while increasing their labor, resulting in a negative impact on their welfare and on that of their children; and finally, (iv) as local communities get pushed to the margin, they may increasingly resort activities that deplete ecosystems, which are a key natural asset for them, in order to fulfill short-term needs. They thereby forego the longer-term benefits of sustainable ecosystem management and become even more vulnerable.
3. This project responds to priorities established in Burkina Faso's National Adaptation Plan of Action (NAPA) through its specific focus on strengthening the 'natural assets' and 'social assets' of local communities that are vulnerable to climate change. The project will focus on the management of forests, soil, fire, natural pasture and wetlands, as these key 'natural assets' that render essential services to local communities and provide the basis for their economic activities. People's ability to use these systems sustainably, and obtain benefits from it, is in fact their best 'social asset'. The continued stream of ecosystem services depends on complex agro-ecological and hydrological cycles that combine both natural and anthropogenic processes. These services include *inter alia* the provision of food, water, fiber, fuel, the regulation of microclimate and hydrological flows, erosion control, the maintenance of soil fertility and soil formation. Unless its impacts are managed, climate change—including the exacerbation of a pre-existing climatic variability that characterizes Burkina Faso—will be a key factor contributing to the breakdown of essential ecosystem services. As a result, natural resource dependent livelihoods will be in peril.
4. Two project zones have been chosen to be the focus of this intervention: the Boucle du Mouhoun Forest Corridor (BdM), which is an important part of the Mouhoun-Sourou River basin, and the Mare d'Oursi Wetlands Basin (MdO) in the extreme north of the country. Local people in these areas are highly dependent on natural resources and ecosystem services for their livelihoods, including—and in particular—the availability of water.

- The project aims to catalyze a systematic process of adapting the use of natural assets to climate risk. This will be done through an expansion of people’s social assets—i.e. their capacity to sustainably manage natural resources—and a strengthening of natural assets.

1.1 Context

- Burkina Faso is a francophone West African country, landlocked in the heart of West Africa (area 274,000 sq. km), surrounded by Mali, Niger, Benin, Togo, Ghana and Cote d’Ivoire. The climate is tropical, with two very distinct seasons – the rainy and the dry one. Most of central Burkina Faso lies on a savanna plateau, intercepted by agricultural areas, and cut by the three principal rivers of the Black, Red, and White Voltas. The largest river is the Mouhoun (the Black Volta), which is partially navigable by small craft. With limited domestic water resources and no coastal access, this relatively small river has major national importance.
- Burkina’s population is nearly 18 million (July 2013 est.¹), with an annual population growth rate of more than 3 percent - making it the 8th fastest growing nation in the world. Prospects for macro-economic growth based on mining and cash cropping are cautiously optimistic, yet the country remains one of the world’s least developed countries and the rural poor face high vulnerability.



Figure 1 and 2 : Map of Burkina Faso; and Burkina Faso in Africa; Sources: US government, and TUBS (Wikimedia commons)

- Apart from localized conflicts over natural resources (between pastoralists and sedentary farmers), the country on the whole remains a peaceful and secure in a neighborhood that has experienced considerable instability. Notably, Burkina Faso is affected by the current conflicts in Mali, with refugees crossing the borders into Burkina Faso and certain areas being under special security status.²

¹ CIA World Fact Book. 2013. Burkina Faso. Available from: <https://www.cia.gov/library/publications/the-world-factbook/geos/uv.html> (Accessed November 2013).

² Contingents of approximately Malian 43,000 refugees, who have been fleeing violence and attacks from rebel groups in northern Mali since 2012, are still being supported within Burkinabé territory by the Office of the United Nations High Commissioner for Refugees (UNHCR) and its partners. A

1.1.1 Environment

9. Burkina Faso sits within the arid savannah belt of the Sahel, just south of the Sahara Desert. The tropical dry climate becomes increasingly arid to the north, with rainfall arriving during one wet season. Year to year, precipitation is highly variable, resulting in frequent droughts since the 1970s. A more detailed description of the climatic situation is given in section 1.2.
10. **Water:** Burkina Faso is a water scarce country with only 906 m³ of freshwater available per person per year (FAOSTAT³). Seasonal variation in water availability is large and droughts frequently devastate rural areas. The drainage system is composed of many streams and ponds in the southern part of the country, divided into three main basins, all connecting with neighboring countries:
 - The Volta basin which extends over 63 percent of the land in the center and west and consists of rivers Mouhoun Nakambé, Nazinon and Pendjari which meet in Ghana;
 - The Niger Basin, which occupies 30 percent of the country drains east and north before emptying into the Niger River;
 - Basin Comoé, which extends over 7 percent of the country, through Côte d'Ivoire before emptying into the Gulf of Guinea.
11. The Volta Basin Authority (VBA)⁴ was established in 2007 to support trans-boundary management of the Volta, of which Burkina is downstream. There are plans to increase abstraction upriver in Ghana on a large scale, via building more dams to increase electricity production and expanding irrigation in the basin.
12. The country has many wetlands occupying about 180,000 ha of water bodies.
13. According to AQUASTAT⁵, annual average rainfall varies from about 1,000 mm in the south to less than 250 mm in the north and northeast, where hot desert winds accentuate the dryness of the region. Between surface and ground water, total renewable water resources are estimated at 12.5 km³ per year. Renewable surface water resources are estimated at 8 km³ per year; with the exception of those in the southwest of the country, all the rivers of Burkina Faso are temporary. In dry years this potential falls to 4.3 km³ per year. The total amount of renewable resources in groundwater is of the order of 9.5 km³ / year. However, according to the inventory of water resources, prepared in 2001 by the ministry that was then responsible for the environment portfolio and water, the fluctuations observed in the aquifer for 20 years it can be concluded **that there are virtually no renewable groundwater resources in Burkina Faso.**
14. To manage its scarce water resources, Burkina Faso has a network of roughly 2,100 dams (after the International Small Hydro-Atlas⁶) built mostly in rural areas to harvest rainwater runoff. These dams provide important local protection against drought, extend the crop season, and create a year-round domestic water source.
15. **Land:** Table 1 shows the respective areas of the main systems of rural land use: arable land; Classified Forests, woodlands and nature reserves; and rangelands. Classified areas (forests, wildlife

large number of these refugees are being hosted in the northern part of the country. Malian refugees live in a challenging environment, affected by successive famine and droughts, extreme heat, violent winds and rain. In 2014, UNHCR anticipates a significant reduction in the number of refugees in Burkina Faso as a result of the spontaneous and voluntary return of Malian refugees to their home country. (See [Link](#) in UNHCR's page, accessed on 28 Jan 2014).

³ FAO. 2013. FAO Country Profiles: Burkina Faso. Available from [Link](#) (Accessed November 2013).

⁴ See [Link](#).

⁵ See [Link](#)

⁶ See [Link](#)

reserves and biosphere reserves) are the second land use category by area after rangelands.⁷ The land use mapping conducted under the Second National Program for Land Management (PNGT 2), through satellite images from 1992 and 2002 yielded the following results, elaborated in the National Program for Sustainable Management of forest and wildlife resources - PRONAGREF. From 1992 to 2002, while rainfed agricultural land area increased by an average of 0.82 percent per annum, and there was an increase in land devoted to agro-forestry, total average deforestation is about 107 626 ha per year, i.e. 0.83 percent; deforestation rates for shrub savannah, the dominant forest land use category, averages about 1 percent per year.

Table 1: Geographic distribution of land use systems (Djiri et al 2011)

Agro-Climatic Zones	Area (km ²)				
	Totals	Arable land	Classified Areas	Various (10 %)	Rangelands
<i>Sahel</i>	36 800	2 503	16 000	3 687	14 678
<i>Southern-Sahel</i>	41 877	6 621	3 390	4 188	27 678
<i>Northern-Soudan</i>	10 813	16 634	11 432	10 681	68 066
<i>Southern-Soudan</i>	88 841	10 622	12 256	8 884	57 079
<i>Burkina Faso</i>	274 400	36 381	43 078	27 440	167 501

16. Among the forest types, shrub savannah was the dominant with 22.68 percent in 2002. This type has undergone a medium conversion, primarily for agricultural purposes, of 71 275 ha per year, and a decrease of 1.03 percent per year from 1992 to 2002. All savannas areas covered 32.01 percent of the country in 2002, and decreased by an average of 2.12 percent per year from 1992 to 2002. The forest type such as woodland and gallery forest extended over 3.24 percent in 2002 and decreased by an average of 0.79 percent per year from 1992 to 2002. Steppes covered 13.49 percent in 2002 and decreased by an average of 1.21 percent annually from 1992 to 2002. In 2002, agricultural land with important natural areas and territories and the agroforestry covered 12.59 percent and 8.45 percent respectively while rainfed cultures covered 29.37 percent. From 1992 to 2002, they increased by an average of 61 357 ha per year. These three types of land use in 2002 accounted for, 50.41 percent of the country, either as an annual increase of 104,925 ha on average, or 2.65 percent per year from 1992 to 2002.
17. **Biodiversity:** Burkina Faso possesses interesting biodiversity sites such as the Pics de Sindou, the Karfiguela Waterfall, the Sacred Dafra Pond, and the Tengréla Lake. The Hippopotamus Pond (UNESCO Biosphere reserve and bird reserve) and the Oursi Pond (Mare d'Oursi, one of this project's sites) have been established as Ramsar sites. Four national parks have been established, including the Pô (or Kaboré Tambi) National Park in the south-center of the country, Arli National Park in the southeast, W of the Niger National Park, a transfrontier park in the east bordering Benin and Niger; and the Deux Balés Park in Mouhoun region. In addition there are numerous Classified Forests and four faunal reserves. Fauna is diverse and includes elephant, hippopotamus, buffalo, monkey, lions, crocodile, giraffe, various types of antelope, and a vast variety of bird and insect life. Some of Burkina Faso's threatened species include panthers, elephants, crocodiles, and pythons.

⁷ Djiri D, Honadia M, Yaméogo U, and Doulikom A (2011). Forest Investment Program: Investment Strategy, Draft 1. Ministry of Environment and Livelihoods (MECV): Ouagadougou, Burkina Faso.

Examples of economically important indigenous plant species are shea tree (*Vitellaria paradoxa*, formerly *Butyrospermum parkii*) and the baobab (*Adansonia digitata* L.).⁸

18. **Forests:** According to the 2010 Forest Resource Assessment (FRA)⁹, the classified State forest covers a total area estimated at 3.9 million hectares, or about 14 percent of the national territory. It consists of seventy-seven classified areas: forests (880,000 ha), National Parks (390,000 hectares), partial and total reserves of fauna (2,545,500 ha), and biosphere reserves. The forests are located mainly in the wetter regions of the country. These are the Haut-Bassin (15 forests), Cascades (13 forests) and Mouhoun (12 forests) regions. Overall, the center and the north of the country have a very limited number of Classified Forests.
19. Although the law prohibits human occupation of the state Classified Forest areas, a 2011 report¹⁰ indicates that 40 villages and hamlets in forest areas have administrative recognition, with populations varying between 200 and 3000 people, and they include cultivated land in their vicinity. (This is in evidence also at the Classified Forests where the project would work.) Some of the hamlets have been in existence for over 30 years. An estimated 15,000 people are living informally in classified forests.¹¹
20. The second report on the status of the environment in Burkina Faso¹² indicates the importance and the geographical distribution forest area converted into agricultural lands during the period between 1999-2002:
 - Pressures on forests: 20,968 ha of forests were converted into agricultural land, representing 2.33 percent of the forest area. The most affected areas are the Haut Bassin (-5.02 percent), Central (-4.67 percent), Eastern (-3.30 percent), the Central North (-3.21 percent), the North (-2.63 percent), and the Cascades (-2.13 percent). About 78 percent of this change corresponds to a conversion into extensive agricultural systems; (78 percent). Intensive systems (22 percent) occur especially along streams in gallery forests.
 - Pressure on the steppes and savannas. Approximately 1,444,316 ha of these areas have been partially or completely converted into agricultural land, or the equivalent of 10.66 percent. In total, 60 percent of these changes are concentrated in the West of the Cascades, Upper Basin and Southwest. This is partly because of the internal migration in the North and the Central Plateau, and also because of the return of Burkinabé from Côte d'Ivoire.
21. According to the 2010 FRA, over the period of 1990-2010, forest cover has declined at an average of 1 percent per Year. Based on these data, the annual deforestation rate would be 65 000 ha / year (6.84 million hectares - 5.54 million ha over 20 years) while the government estimates the deforestation rate at 107 626 ha / year. This large difference (which is almost doubled) sheds light on the poor quality of information on forestry statistics in Burkina Faso, which is due to a wide gap between the periods when forest inventories were conducted. The first and only national forest inventory was conducted 30 years ago, and the second inventory is in progress (2011-2013). Thus, deforestation rates stated in the literature on Burkina are numerous and varied.¹³
22. **Overgrazing:** Livestock-raising in Burkina Faso depends to a significant extent on grazing and

⁸ Burkina Faso National Biodiversity Strategy and Action Plan. Available online from [\[Link\]](#)

⁹ FAO. 2010. Global Forest Resource Assessment: Burkina Faso Country report. Available online from: [\[Link\]](#). (Accesses December 2013.)

¹⁰ Yaméogo M (2011). Report from Burkina Faso as part of developing a plan for the convergence of sustainable forest ecosystem management in West Africa. Version submitted to the national validation workshop. Via FIP.

¹¹ *Ibid.*

¹² SP/CONEDD (2009). Second report on the state of the environment in Burkina Faso. Ministry of Environment and Livelihoods (MECV): Ouagadougou, Burkina Faso.

¹³ See e.g. Westholm L and Kokko S (2011). Prospects for REDD+. Local forest management and climate change mitigation in Burkina Faso, Focali Report No 2011:01, Gothenburg.

fodder from forests, woodlands and shrub-lands. A study published in 2002¹⁴ indicates that 35 percent of plant biomass consumed by animals comes from forests and woodlands: equivalent to 4.9 million tons of forage per year with a virtual economic value of 72 billion GCFA (SP/CONEDD, 2009).

23. **Bush fires:** There are two types of fire: (i) Controlled Burning as a forest management tool by the forest service; (ii) Uncontrolled burning or bushfires, which can damage the forest. Bushfires are started; (a) to encourage re-growth of grass-lands and destruction of dried grasses; (b) to allow for re-growth, of savannah bush land, for fodder (iii) to control forest growth, which could interfere with pasture-land; (d) to facilitate hunting; and (iii) to facilitate destruction of parasites and disease vectors for both humans and livestock. Bush fires occur on 30 to 40 percent of the combustible area of the country every year with an average of 5.3 million hectares burnt annually.

The role of ecosystems in climate change adaptation

24. Healthy, well-functioning ecosystems enhance natural resilience to the adverse impacts of climate change and reduce the vulnerability of people. Ecosystem-based management offers a valuable yet under-utilized approach for climate change adaptation, complementing traditional actions such as infrastructure development. This approach, known as “Ecosystem-based Adaptation” (EBA), uses biodiversity and ecosystem services as part of an overall adaptation strategy to help people and communities adapt to the negative effects of climate change at various levels. In addition to protection from climate change impacts, EBA also provides many other benefits to communities, for example through the maintenance and enhancement of ecosystem services crucial for livelihoods.¹⁵

1.1.2 Economy and sectors important for livelihoods

25. Burkina Faso’s economy is reliant on agricultural production, gold exports (production of which soared to record levels in the past three years), and cotton (which, for a long time, has been the chief export). The country remains vulnerable to such exogenous shocks as low rainfall/rainfall variability, international financial and oil crises, and regional instability.¹⁶
26. Burkina Faso’s political stability over the past 15 years, together with a transition to a more open, market-driven economic model, has contributed to growth and poverty reduction. Burkina Faso’s has had a steady annual average growth rate of over 5.5 percent between 2000 and 2012, which picked up in 2012 (9 percent), driven by the mining boom and good cotton harvests resulting from favorable weather conditions.
27. Growth over the past 15 years is widely attributed¹⁷ to two factors: first, a massive migration of people from the rural agricultural sector to the urban informal sector and second, agricultural production of food crops and cotton both fueled by a massive expansion of cultivable land. Agricultural growth has been almost uniquely generated through land expansion and more labor, and not through modernization and the adoption of new technologies, such as irrigation, machinery and improved seeds. Therefore, the agricultural sector is still highly vulnerable to climatic conditions. The US-funded Millennium Challenge Corporation (MCC) Compact is investing in

¹⁴ Kabore C (2002). “Forest Development in the Sahel: 20 years of practice in Burkina Faso”. Cited by the Investing in Locally Controlled Forestry (ILCF). Available from: http://tfd.yale.edu/sites/default/files/tfd_burkina_faso_ilcf_dialogue_background_paper.pdf. (Accessed January 2014.)

¹⁵ Via UNEP (undated). Building Resilience of Ecosystems for Adaptation. Available from: [\[Link\]](#). (Accessed January 2014.)

¹⁶ World Bank (undated). Country Brief Burkina Faso. Available from [\[Link\]](#). (Accessed October 2013.)

¹⁷ Grimm M and Günther I (2005). Growth and Poverty in Burkina Faso: A Reassessment of the Paradox. Discussion Paper 482. German Institute for Economic Research: Berlin.

strengthening the agriculture sector through improved infrastructure and water-management techniques, and helping reform rural land tenure (implementing the Rural Land Tenure Law of 2009 and improving transparency).¹⁸

28. Slower growth is projected in 2013 owing to lower gold prices and a decline in gold production (39 metric tons compared to 42 metric tons in 2012) and low investment expenditure. Projections for cotton production stand at 730,000 metric tons against 620,000 metric tons in 2012 and oil prices are falling. Volatile growth rates have an impact on poverty reduction, particularly among the poorest population groups. For this reason, in September 2013 the Government passed a draft supplementary budget that includes social measures estimated at CFAF 65 billion (1 percent of GDP), with the aim of boosting purchasing power. According to the most recent IMF and World Bank estimates, growth is expected to continue in the medium term, albeit at a slower pace (roughly 7 percent for the 2013-2015 period), owing mainly to the projection of lower gold prices on the international market.¹⁹
29. Still, Burkina Faso is one of the world's least developed countries: the poverty rate was estimated at 46 percent in 2009, gross domestic product per capita is US\$632, while gross national income is US\$1,510 (2012 data; World Bank 2013a and b). UNDP (2013) ranks Burkina Faso 183rd amongst 187 countries on the Human Development Index, taking into account life expectancy, education, as well as income indices. More than 70 percent of the population lives on less than US\$2 per day (2009 data - latest available; World Bank 2013c). Despite an average growth of 5.3 percent over the period of 2005 - 2011, the proportion of the population in poverty decreased slowly from 46.4 percent in 2003 to 43.9 percent in 2009/2010.
30. Why is Burkina still so poor despite impressive economic growth? Researchers have studied the continued high levels of poverty in Burkina Faso²⁰, despite its relatively strong economic growth and good macroeconomic performance. High population growth and non-inclusive development are considered major constraints for poverty reduction. Poverty levels are known to fluctuate largely on resource availability, and notably by season and linked to rainfall / water availability.²¹ Poverty levels have been shown to rise following drought, showing that the population is - despite overall decreasing poverty - still **very vulnerable to climatic shocks**. Following the 1997/1998 drought, prices of three main cereals: sorghum, millet and maize - increased. Malnutrition and child mortality temporarily increased as a consequence, and are still at a relatively high level. This suggests a **direct link between climatic conditions, performance in the food crop sector, food prices and nutrition**. Recurrent droughts and the rising long-term trend in food prices are seen to have direct health effects through under-nutrition and premature mortality²².

Important economic sectors: Agriculture, Forestry and Livestock

31. Agriculture, forestry and livestock are inter-related and depend on each other. Agro-sylvo-pastoral pursuits account for about 35 percent of the gross domestic product (20 percent for agriculture and

¹⁸ MCC (as before).

¹⁹ *Ibid.*

²⁰ The so-called 'Burkinabè Growth-Poverty Paradox' refers to the phenomenon of increasing poverty despite sustained macro-economic growth and constant inequality. See e.g. Casse T and S Jensen. 2009. Do We Understand the Linkages between Economic Growth, Poverty Targets and Poverty Reduction? *Review of African Political Economy* 36 (122): 539-553.

Grimm et al. 2013. Burkina Faso: Shipping around the Malthusian Trap. United Nations University's World Institute of Development Economics Research (WIDER) Growth and Poverty Project (GAPP). Available online from: [\[Link\]](#).

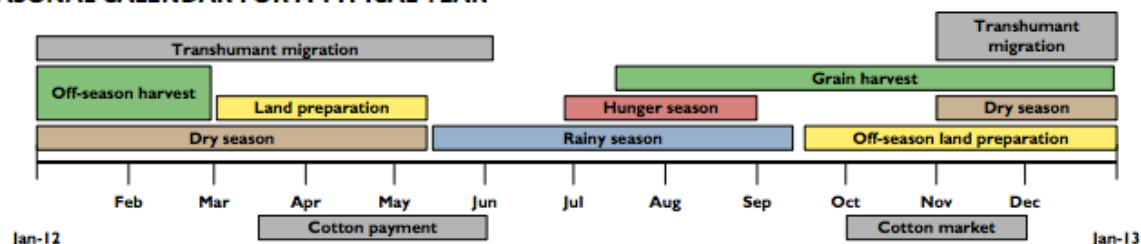
Grimm M and I Günther (2007). Growth and Poverty in Burkina Faso: A Reassessment of the Paradox. *Journal of African Economies* 16 (1):70-101.

²¹ Grimm and Günther 2005 (as before).

²² Grimm et al 2013 (as before).

15 percent forestry, fisheries and hunting, per MECV, 2007²³) and employs about 90 percent of the labor force. The annual calendar of seasonal activities reflects that Burkinabe undertake a complex web of livelihood and economic activities, sometimes simultaneously and very linked to the seasons - reword; see Figure 3.

SEASONAL CALENDAR FOR A TYPICAL YEAR



Source: FEWS NET

Figure 3: Seasonal calendar of economic activities for a typical year in Burkina Faso (FEWS/USAID)

32. **Agriculture:** The agriculture sector engages more than 80 percent of the active population. More women (52 percent) than men (48 percent) work in agriculture, but despite this they have limited access to resources and extension services such as micro-credit, land rights, and access to technology²⁴ (more detail on this topic in section 1.1.3). Millet, sorghum, maize, and rice are the principal crops grown for domestic consumption, while cotton and increasingly sugar cane in the south are grown commercially on family and communal plots. Like other Sahelian countries, **Burkina Faso's agriculture is mainly rainfed, making it highly dependent upon rainfall amounts and distribution.** In good seasons, the country's grain production covers domestic consumption needs, and cereal imports are limited to rice and wheat. The northern part of the country is characterized by a shorter growing season, higher rainfall variability, and less diversified agriculture, while population is mainly concentrated in the south.
33. About 3 million to 4 million Burkinabe are migrant workers, many of whom work on cocoa farms in Cote d'Ivoire. Their remittances provide a contribution to the economy's balance of payments that is third only to gold and cotton as a source of foreign exchange earnings. Political and economic problems in Cote d'Ivoire have had a direct impact on this source of revenue for millions of Burkina households.
34. **Forests:** At the national level, the contribution of the forest sector to public revenue generation is high: fees, taxes, and permits paid for the use of timber and other wood products, mostly in the form of woodfuels, contribute 5.6 percent of GDP, or 209 billion FCFA. Nurseries account for 7.26 billion FCFA and construction timber 1.01 billion FCFA. Non-timber forest products generated around 25.6 billion FCFA in 2008, and created a growing number of small and medium scale enterprise sector (SME), in processing, exports and imports.
35. Forest-based economic activities, such as making charcoal and selling forest products often contribute to over 25 percent of rural household income and reduce the impacts of droughts and lean times²⁵. Equally important are silvo-pastoral systems and agroforestry – all of which rely on

²³ MECV (2007). National environmental policy. Ministry of Environment and Livelihoods (MECV): Ouagadougou: Burkina Faso.

²⁴ González et al (2011). Climate change and women farmers in Burkina Faso. Oxfam Research Reports. Available from: [\[Link\]](#) (Accessed December 2013).

²⁵ FIP (2011). Forest Investment Plan (FIP) for Burkina Faso. Meeting of the FIP Sub-Committee. Available from [\[Link\]](#) (Accessed December 2013).

forest ecosystems for their existence.

36. **Livestock:** The most recent livestock sector brief for Burkina Faso (FAO 2005)²⁶ indicates livestock contributes around 7.5 percent of GDP. Livestock in Burkina is almost totally in the hands of pastoralists and smallholders farmers, who are among the poorest groups in society (around 74 percent of pastoralists and 66 percent of mixed farmers are considered poor). Transhumant livestock production accounts for over 70 percent of the country's cattle. Transhumance can be defined as “a system of animal production characterized by seasonal and cyclical migration of varying degrees between complementary ecological areas and supervised by a few people, with most of the group remaining sedentary”²⁷. Transhumant herds usually move from areas that are difficult, unbalanced and changeable, such as the Sahel and agro-ecologically vulnerable zones. Transhumance is a way of adapting to these conditions and making use of ecological complementarities between the Sahel and Sudan regions. It is a livestock system based on practical and economically viable management of pastoral resources that has enabled pastoral people such as the Peulhs, the Tuaregs and the Moors to survive the major ecological and climatic crises that periodically occurs in the Sahel countries. Experts agree that it protects the environment and is profitable and competitive, as well as allowing some communities, especially the Fulani (Peulhs / Fulbe), to affirm their cultural identity. There are two types of transhumance: the ‘short distance’ transhumance, which takes place within the North, and the ‘great distance’ transhumance, which takes place from North to South. Integrated stock rearing is widespread in the southern belt of the country; semi-intensive to intensive dairy farms and a few fattening farms are located in urban and peri-urban zones.²⁸
37. The last two decades have seen an increase in milk and meat supply, however most of this growth is due to an increase in numbers rather than productivity. The growth is increasing from more settled agro-pastoralism²⁹, while transhumance is in decline due to a number of environmental, social, economic and political factors. These factors are shifting transhumant pastoralism slowly but surely into agro-pastoralism, which is sedentary or semi-transhumant livestock farming that links crop growing and livestock. Transhumant livestock breeders from Mali and Burkina Faso have been gradually settling in northern Côte d'Ivoire since the eco-climatic crises of the 1970s and 1980s and lease land there to grow cereals for their own consumption. They practice semi-transhumant livestock farming along with growing crops, which enables a transfer of natural fertilizer to farmland and the use of excess crops for livestock³⁰.
38. **Localized conflicts over land and natural resources:** Violent incidents between animal breeders and sedentary farmers have rapidly increased in northern and eastern Burkina Faso recently, according to the Ministry of Animal and Fishery Resources³¹. The Ministry estimates some 600 conflicts occur each year involving the death of pastoralists, farmers or government workers, the destruction of farms or houses and the injury or death of animals. Some 55 people have been killed in 4,000 recorded clashes over the past four years, with cases rising year on year. Conflict arises when farmers have encroached on transhumance paths, leading herders to move onto agricultural land to enable their animals to feed. Competition over scarce agricultural land is also mounting with rapid population growth. Land scarcity has been accentuated by a growing agri-business presence brought on by: the relatively new Rural Land Tenure Law (2009)³² that facilitates private land

²⁶ FAO. 2005. Livestock Sector Brief: Burkina Faso. Available from [\[Link\]](#) (Accessed November 2013).

²⁷ González et al 2011 (as before).

²⁸ González et al 2011. (as before).

²⁹ FAO 2005 (as before).

³⁰ OECD (2010). Promoting and supporting change in Transhumant pastoralism in the Sahel and West Africa. Policy Note No. 3: Livestock in the Sahel and West Africa. Available from: [\[Link\]](#). (Accessed January 2014.)

³¹ IRIN. 2012. BURKINA FASO: Preventing conflict between farmers and herders. Available from: [\[Link\]](#). (Accessed December 2013.)

³² USAID. 2011. USAID Country Profile. Property Rights and Resource Governance, Burkina Faso.

ownership; and by the growth of artisanal gold miners who both squeeze herders off transhumance routes but also poison water points with chemicals. Some 800 artisanal mining sites have opened since 2007³³. Many of the clashes in the northern Sahel region fall along ethnic divides between Fulani herders and Mossi farmers.

39. Transhumant pastoral routes will likely continue to adjust as climate and land-use patterns shift. This could easily lead to more conflicts between pastoral communities, and between herders and farmers³⁴. The 2009 Rural Land Tenure law and increasingly decentralized land management have created legal and institutional frameworks whereby shifting land uses can be more effectively planned or managed, for example via local land charters to manage natural resources and ensure participatory management of shared resources. However, there is still a shortfall in implementation - both in the development of these local charters and their active utilization by communities.
40. **Food security and nutrition:** Food insecurity and malnutrition rates are chronically high in Burkina Faso, according to the World Food Program³⁵. The country is prone to recurrent natural disasters such as drought, floods and locust invasions, which have grown increasingly frequent and severe. In 2011, Burkina Faso faced its third drought in five years, which led to the Sahel food and nutrition crisis in 2012.³⁶ In addition, desertification in drought-prone areas is rapidly spreading and the impact of climate change is increasingly affecting the availability of water and pasture.
41. In 2012, Burkina Faso ranked 46 out of 76 on the global hunger index³⁷. An emergency food security assessment in September 2012 estimated that 1.7 million people in Burkina Faso will be at risk of food insecurity and unable to meet their food needs beyond three months after harvest in 2013. In addition, the influx of Malian refugees into the country has generated additional challenges for food security in Burkina Faso, for the refugees but also for the communities surrounding refugee settlements. The global acute malnutrition rate among children under 5 years old has not improved in recent years, and remains above the 10 percent 'serious' threshold at 10.9 percent (preliminary results SMART survey 2012). Levels of stunting have also not improved since 2008, remaining above the 'serious' threshold at 33 percent. Micronutrient deficiencies are also high: 88 percent of children under 5, 58 percent of pregnant women and 50 percent of lactating women suffer from anemia.
42. National figures hide important regional differences. Indeed, the situation can be in surplus in the West and Northwest, balanced by a considerable deficit in the East and the Sahel. Food production is also closely dependent on localized weather conditions and can vary dramatically from place to place, one year to the next³⁸.

1.1.3 Institutions, decentralization, and local government

43. The key government institutions involved in the sectors related to rural livelihoods, natural resources and climate change are:
 - The Ministry of Environment and Sustainable Development (MEDD). In addition to all environmental management and supervision issues, MEDD is responsible for the implementation of global environmental conventions, including the UNFCCC, CBD and the UNCCD;

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ WFP country overview for Burkina Faso. Available online from: [\[Link\]](#).

³⁶ See e.g. [\[Link\]](#).

³⁷ *Ibid.*

³⁸ UNDG (2006). Burkina Faso: Common Country Assessment, by the UN Country Team. Available from: [\[Link\]](#). (Accessed January 2014.)

- Ministry of Agriculture and Food Security (MASA). This ministry is responsible for agriculture, agricultural development and food security;
- The Ministry of Water, Hydrological Works and Sanitation (MEAHA). This is a new ministry, created in January 2014 and exclusively dedicated to water resource management issues and its various facets (was previously handled by the ministry responsible for agriculture and irrigation);
- The Ministry of Animal and Fishery Resources (MRAH) is responsible for livestock grazing and development in this sector;
- The Ministry for the Economy and Finance (MEF), responsible for budget planning, allocations, and environmental accounting;
- CONEDD. This Council is responsible for coordination across Ministries on environment and sustainable development issues. It is responsible for strategic reflection and strategy development in related sectors. It is chaired by the MEDD, and has a Permanent Secretariat (SP/CONEDD) housed inside the MEDD;
- The National Council for Emergencies and Rehabilitation (CONASUR). The Council is responsible for coordination related to food security and natural disasters. It is chaired by the MASA;
- The Ministry of Land Planning and Decentralization (MATD) is responsible for the process of decentralization (described in more detail below); and
- The National Society for Security Stock Management (SONAGESS). This state-owned company is responsible for the storage and distribution of the food security stocks across the country.

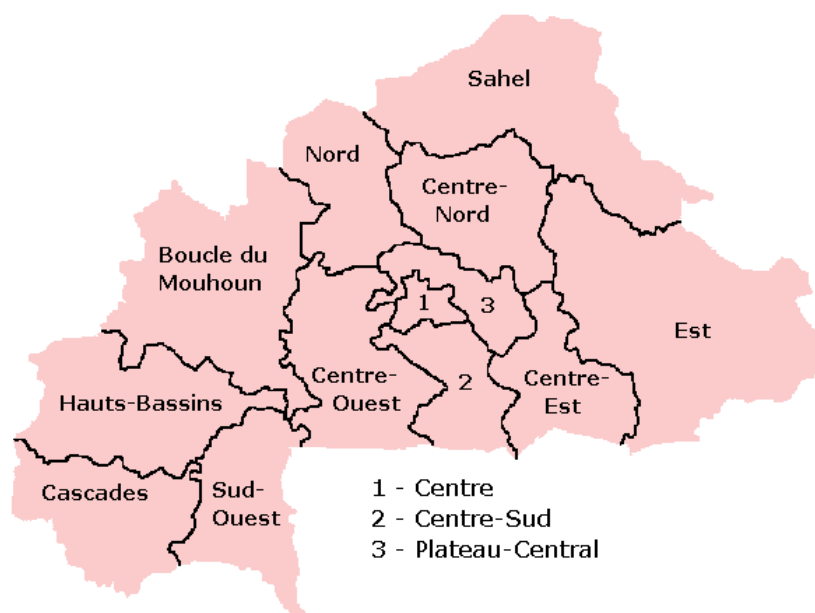


Figure 4: Burkina's 13 Administrative regions; source Geohive (Wikimedia commons)

44. All of the above agencies have affiliates at provincial and regional levels. Currently, in line with the on-going decentralization process, more power and authority is being transferred to local levels.
45. Administratively, Burkina Faso is divided into 13 regions (see figure above). The country has undergone a process of democratization and decentralization since the 1990s. The commune is the

basic unit of local government, of which there are three types: 302 rural communes.³⁹ Each commune has a municipal council directly elected through universal suffrage and a mayor indirectly elected by the municipal council. Every commune has to articulate its own development strategy via a *Plan Communal de Développement* (PCD – Communal Development Plan). The PCD, developed in a participative manner, provides an overview of the commune’s strengths and weaknesses, investments needed and the budget required for its achievement. Since 2006/7, virtually all of the communes prepare PCDs. This local level planning process has successfully improved the communication among stakeholder (residents, local elected officials and the private sector), and it also improved their pledge with donors, development agencies and partner organizations for a stronger mobilization of resource at the local level.⁴⁰

46. The country’s first major local elections took place in 2006, though major challenges remain for decentralization implementation. For example, UNDP⁴¹ reported a **90 percent illiteracy rate among rural officials**, nearly 16,000 individuals, as well as weak technical capacity and poor support mechanisms for decentralized services and territorial communities. A 2010 report for the World Bank concluded that local governments have a very low degree of discretionary power and weak accountability to citizens at all levels. In the fiscal sphere, taxing powers are restricted, while transfers are insufficient and unpredictable, making local financial management extremely difficult (Mahieu and Yilmaz 2010)⁴².
47. Decentralization and transfer of natural resource management to rural communities can be an opportunity for pastoralists because it should ensure better access to pastures. However, they also risk being more marginalized because of their low representation on relevant local decision-making bodies. There is also the risk of various local taxes that may be an obstacle to access to pastures.⁴³

1.1.4 Policy, legislative and regulatory context

48. Climate change adaptation efforts are situated within a supportive development policy context, notably:
 - **Strategy for Growth and Sustainable Development (SCADD) 2011-15:** The SCADD replaces the Poverty Reduction Strategy Paper (PRSP), which was the central framework of the government’s economic and social development policies from 2000 through 2010. SCADD provides a framework for the achievement of the government’s goals for 2011-2015. It is consistent with the country’s long-term development strategy (Burkina Faso Vision 2025), the national land management strategy (SNAT), and the national strategy to accelerate progress towards the Millennium Development Goals (MDGs). The SCADD sets out economic and social policies to support broad-based growth, sustained poverty reduction, and progress towards the Vision 2025. The SCADD has a stronger focus on environment than the PRSPs did. It stresses the importance of climate risk to sustainable development and economic growth, noting significant economic losses, and emphasizes the links with natural resource management and ecosystem services⁴⁴.
 - **United Nations Development Assistance Framework (UNDAF) 2011-2015:** Being the program framework that describes the collective response of the UN system to national development

³⁹ As well as 47 ordinary urban status communes; and 2 special status urban communes (Ouagadougou and Bobo-Dioulasso)

⁴⁰ UNDP (undated). Burkina Faso: Programme in support for Decentralization, Citizen Participation and Local Development. Available from: [\[Link\]](#). (Accessed January 2014.)

⁴¹ UNDP (2009). *Owning the Participatory Process in Burkina Faso*. Available from: [\[Link\]](#). (Accessed January 2014.)

⁴² *Ibid.*

⁴³ OECD (as before).

⁴⁴ As an illustration, SCADD notes that climatic factors led to a loss of 268,005 ton of cereals, valued at 35,266 billion CFA in 2009; IMF 2012.

priorities, the UNDAF directly supports the SCADD. The three UNDAF outcomes for 2011-2015 are: (i) accelerated economic growth that is sustainable and pro-poor, (ii) the quality of human capital is improved, and (iii) the political, administrative, economic and local governance is made more efficient and more respectful of gender equality and human rights.

- **UNDP's Country Program Action Plan (CPAP):** as a means to supporting the achievement of each of the three UNDAF outcomes.
49. Burkina Faso has also devised its National Adaptation Program of Action (NAPA; mentioned earlier), the Strategic Framework for the Fight against Poverty (CSLP), the Rural Development Strategy (SDR), the National Action Plan for Desertification Control (PAN/LCD), the National Biodiversity Strategy and Action Plan (NBSAP), the Action Plan for Integrated Water Resource Management (PAGIRE), as well as other instruments aimed at regulating specific sectoral policies.
 50. Legislative and regulatory instruments are also formulated, including the bill on Agrarian and Land Reforms (RAF), the Environment Code, the Forestry Code, the Orientation Law on Pastoralism, the Orientation Instruments on Decentralization, the Orientation Instruments on Water Management and the decree to establish CONASUR.⁴⁵

1.1.5 Culture and gender

51. There are more than 60 ethnic groups in Burkina Faso⁴⁶. The Mossi are most numerous, constituting almost half of the total population. They live in the central parts of the country, while other groups are dispersed on the national peripheries. Sedentary and semi-nomadic pastoral people, such as the Fulani⁴⁷ are in majority in the dry north while people who have farming as their principal livelihood are in majority in the rest of the country. Cattle-herding Fulani are mobile and the farming populations have a long history of interaction with Fulani on move southward for greener pastures. Many Fulani have settled among farmers further south. The western part of the country is ethnically very mixed and has therefore often been described as a cultural mosaic.
52. While there are wide religious and cultural differences, two hierarchies exist in all ethnic groups in Burkina Faso: age and gender⁴⁸. Differences between ethnic groups in these regards are differences in degree and scope rather than in kind. The age hierarchy implies that a senior always has authority over a junior and that a junior always has to respect a senior. While the age hierarchy is egalitarian in so far that everybody who has long life will reach the top of the hierarchy, the gender hierarchy is given and cannot be transgressed, although mothers maintain a special status (see much deeper analysis of relations between men and women of Burkina in SIDA 2004).
53. In all ethnic groups, women are responsible for grinding and pounding grains, cooking, fetching water and collecting firewood. Women collect wild plants, for food, medicine and other purposes. Although the environmental and cultural conditions differ in Burkina Faso, a shared experience for rural women is that the deterioration of the natural environment makes it more difficult to fulfill the responsibility to cook and to provide the sauce for the daily meal. Women are constrained in their farming by the internal organization of the family. They do not fully control their own labor time, and they have limited access to other family member's labor. This limits their possibility to handle labor-bottlenecks and keep up the timeliness of operations. They have limited access to manure

⁴⁵ Global Facility for Disaster Reduction and Recovery (2012). Burkina Faso country program report. Available online from: [\[Link\]](#). (Accessed December 2013.)

⁴⁶ See SIDA (2004). A Profile on Gender Relations, Towards Gender Equality in Burkina Faso. Available from: [\[Link\]](#).

⁴⁷ Fulani is the commonly used appellation in English texts. In French these people are called Peul, but they call themselves FulBe in their own language.

⁴⁸ See SIDA 2004 (as before).

because the manure produced within the farming unit is most likely to be used in the family field. If the husband possesses an ox-plough he may plow her field, but only after work on the family field has been done. The agricultural extension services have only recently started to address women directly, and most women do not receive any information about new farming techniques.⁴⁹

54. Many descriptions of gender roles (including the above) are simplified and do not capture the fact that the gendered division of labor is constantly renegotiated in response to new situations and economic necessity. Women have also taken on new tasks and responsibilities, and more rights exist at least on paper than at any time before. It's difficult to capture here various possible scenarios or contexts that gender relations can take place; we try to handle gender issues throughout the document.

1.2 Climate Change Context

55. Climate change represents a significant threat to all countries in the world. This threat is tempered by capacity of each country to adapt to the changes. Adaptive capacity is the “ability to design and implement effective adaptation strategies or to react to evolving hazards and stresses so as to reduce the likelihood of the occurrence and/or the magnitude of harmful outcomes resulting from climate-related hazards.”⁵⁰ Burkina’s current climate and projected changes is described below, in the context of region-wide changes, followed by the results of an initiation downscaling of analysis and projections with focus on the national and sub-national levels that are relevant to this project.

1.2.1 Regional climate

Recent climate (regional)

56. The Sahel has one of the world’s most variable climates; few other places share the same climate variability that characterizes this region. The impact of these large fluctuations has been exacerbated recently by the occurrence of one of the most severe and dramatic droughts of the last hundred years. On an inter-seasonal timescale the precipitation over the Sahel is regulated by three main processes: a flow of moist air from the south associated with the west African monsoon onset, the seasonal movement of the inter-tropical convergence zone (ITCZ; that affects seasonal precipitation patterns across that continent) and a dry (and aerosol rich) advection (i.e. a transport) from the Sahara.⁵¹

Climate projections (regional)

57. Despite the skill climate models have in predicting seasonal variability over the Sahel, very little consensus exists on climate change projections with models disagreeing even on the sign of the change. Such a significant disagreement has the potential to make long term model projections nearly impossible for the region as a whole, at least until further advancement is made in the underlying scientific understanding. Projections for temperature tend to be more uniform among climate models and suggest that an increase, especially for summer, is likely to largely exceed the global mean increase. It is uncertain how rainfall in the Sahel will evolve in this century⁵².

⁴⁹ Evenson R and Siegel M (1999). Gender and Agricultural Extension in Burkina Faso. *Africa Today* 46(1): 75-92.

⁵⁰ Brooks N et al (2005). The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation. *Global Environmental Change* 15(2): 151-163.

⁵¹ UK MET Office for the Foreign and Commonwealth Office (2010.) Sahelian climate: past, current, projections. OECD Sahel and West Africa Club Secretariat: Paris.

⁵² *Ibid.*

58. More generally, on a continental scale, the most recent report of the Inter-Governmental Panel on Climate Change (IPCC Assessment Report 4, AR4⁵³) indicates that all of Africa is very likely to warm during this century. The warming is very likely to be larger than the global, annual mean warming throughout the continent and in all seasons, with drier subtropical regions warming more than the moister tropics. Rainfall projections vary widely continent-wide. However, the AR4 models have significant systematic errors in and around Africa making it difficult to assess the consequences for climate projections. The absence of realistic variability data in the Sahel for most of the 20th-century simulations casts some doubt on the reliability of models in this region. Some important factors (e.g. vegetation feedbacks and feedbacks from dust aerosol production) are not included in the global models. Possible future land surface modification is also not taken into account in the projections. The extent to which current regional models can successfully downscale precipitation over Africa is therefore unclear, and limitations of empirical downscaling results for Africa are not fully understood.
59. Preliminary results from AR5 indicate that West Africa is seeing more incidents of drought.⁵⁴
60. Studies have also been conducted into the possible effects of climate change on the hydrology of the Volta River basin, using a range of approaches and models.⁵⁵ These studies have highlighted the sensitivity of river flows to rainfall variability. In contrast, the future development of large numbers of additional small reservoirs in the upstream portion of the catchment is expected to have relatively little impact on downstream hydrology. However, currently, there is little information on the possible implications of climate change for the planned large-scale water resources development in the basin. Water resources in the basin have come under increasing pressure in recent years. Population growth in the two countries that cover the largest proportion of the basin (i.e., Ghana and Burkina Faso) has resulted in larger abstractions of water to meet the increasing demand (e.g. plans to build more dams to increase electricity production and expand irrigation in the basin). Climate change, and the uncertainty associated with it, will complicate the management of the basin's water resources.

1.2.2 National and sub-national climate

Recent climate (national and sub-national)

61. **General climate:** The climate is characterized by two extreme seasons: abundant rains, especially in the central and southern regions from May through September, followed by a very dry season from October through April dominated by the effects of the “harmattan” (relentless sand-carrying winds from the Sahara). Given the high rates of transpiration and evapo-transpiration, large parts of the country have highly limited water supplies for most of the year. Moreover, the dry areas have been expanding in recent years. Burkina Faso naturally exhibits high levels of spatial and temporal climate variability, particularly in terms of rainfall; Burkina Faso suffers an extreme, variable climate: the same area can be affected by both flooding and drought within only a few months. The level of rainfall can vary dramatically from year to year, and over quite small distances.
62. **Temperature:** Since 1975, temperatures have increased by more than 0.6° Celsius (°C) across most

⁵³ IPCC (2007). IPCC Fourth Assessment Report 2007 – see 11.2 Africa - AR4 WGI Chapter 11: Regional Climate Projections. [Link](#). (Accessed December 2013). The upcoming IPCC report - AR5 – will be released in 2015, although the first component, Climate Change 2013: The Physical Science Basis, was accepted by the IPCC on 27 September 2013. Only the Summary for Policymakers was published in November 2013 and is available publicly. The Working Group II (WGII) contribution to the Fifth Assessment Report on impacts, adaptation and vulnerability will be considered in Yokohama, Japan, on 25-29 March 2014.

⁵⁴ *Ibid.*

⁵⁵ McCartney et al. 2012. The water resource implications of changing climate in the Volta River Basin. International Water Management Institute (IWMI) Research Report 146.

of Burkina Faso, with typical rates of warming greater than 0.15°C per decade. Time series of air temperature data (USGS 2012) show that the magnitude of recent warming is large and unprecedented within the past 110 years. The USGS (2012) estimates that the 1975 to 2009 warming has been more than 0.5°C for Burkina Faso during the June–September rainy season. Given that the standard deviation of annual air temperatures in these regions is low (0.4°C), these increases represent a large (+1.2 standard deviations) change from the climatic norm, showing that Burkina Faso is becoming significantly hotter.

63. **Precipitation:** Rainfall in Burkina Faso declined rapidly between 1950 and the mid-1980s, and recovered in the 1990s. Between 2000 and 2009, however, the recovery stalled, and the 2000–2009 average remained about 15 percent lower than the 1920–69 mean average. The recent rainfall increases are probably due to the warming of the northern Atlantic Ocean (Hoerling et al 2006); as the northern tropical Atlantic has increased in temperature over this period, this has drawn the summer rains further north, increasing rainfall in the Sahel. Burkina Faso receives most of its rain between June and September, and rainfall totals of more than 500 millimeters during this season typically provide enough water for crops and livestock. Figure 5 indicates the spatial distribution of temperature (a) and rainfall (b) averaged nationally over 1971-2000.

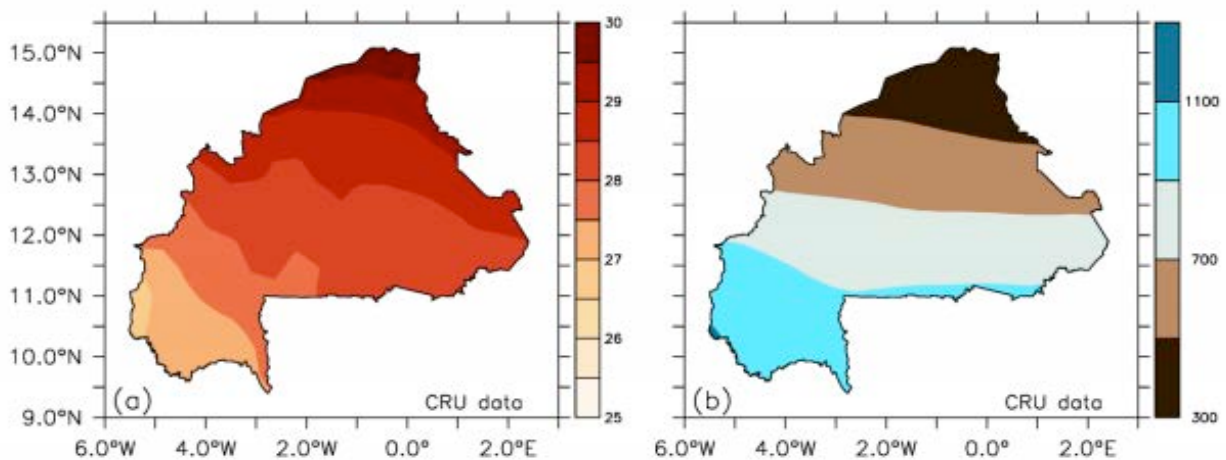


Figure 5: Spatial distribution of temperature (a) and rainfall (b) averaged over 1971-2000 in Burkina Faso; source Diasso 2013 (PPG study).

Projected change (national and sub-national)

64. **Method:** With all cognizance of the limitations and uncertainties identified above, the PPG study Diasso 2013 aimed to downscale climate projections, a strategy for generating locally relevant data from Global Circulation Models (GCMs) such as those used in AR4. The overarching strategy is to connect global scale predictions and regional dynamics to generate national and sub-nationally specific forecasts. The study used projections from eight leading model outputs (‘forcing’ with 8 GCMs) to study the evolution of the average, minimum and maximum temperature and their impacts on precipitation, evapotranspiration and total runoff as well as spatial scales multi-decadal, seasonal and decadal time over the period 2021-2060.
65. **Temperature:** Eight leading models unanimously show an increase in temperature during the periods 2021-2050 and 2071-2100. At the national level, all the models indicate unanimously a

general rise in average temperatures of 1 to 2° C in 2021-2050 and 2071-2100 2 to 3.5° C in one scenario (RCP4.5; see link to PPG Study in Annex 8 for detail on methods). A downscaled study of climate projections was undertaken as part of the mentioned PPG Study), wherein all of the models predict the greatest increase in temperature over the two proposed project sites (introduced in more detail in [Section 1.6](#)): (i) in the Sahel region, where MdO project zone is located, maximum temperatures are expected to increase around 1.5 to 2.5° C while the minimum increase will be 1.5 to 2.5° C between the decades 2020s and 2060s; and (ii) at the Boucles de Mouhoun region, minimum and maximum temperatures are expected to increase of 1 to 3° C in each decade from 2021 to 2060.

66. The Diasso study indicates that two project zones targeted by the project (described in more detail in [Section 1.6](#)) show the country's highest average temperatures, which is expected to lead to a rapid increase in evapotranspiration and ecosystem imbalances.
67. **Precipitation:** The average of the models shows little change in rainfall in 2021-2050 (a change of -2 to +4 percent of the average amount of 1970-2000). It is important to stress that there was no consensus among the models as to the actual impact of this increase in temperature on rainfall. However, only one model (ECHAM; see Annex 8 for detail on methods) provides a considerable reduction in rainfall of 4-14 percent of the annual amount of rainfall. The rest of the models do not indicate considerable change in rainfall in the 2021-2050 and 2071-2100 periods. While the expected environmental consequence of such a temperature increase is reduced precipitation, the models show that decreases in rainfall are less certain; research⁵⁶ suggest this is linked to natural decadal variations in the Atlantic Ocean. At the Sahel region, the average rainfall is expected to increase only minimally, with a change in the number of rainy days per year at only an insignificant level (up or down). Similarly, at Boucle du Mouhoun region, rainfall changes are expected to be minimal although temperature increases here could lead to destabilization of the water balance
68. **Seasonality of precipitation.** PPG studies also looked at possible changes in rainfall regime with respect to seasonality, by analyzing possible changes in the onset and/or cessation of dry spells. Two scenarios were used in modelling forecast changes: RCP45 and RCP85. The following three conclusions can be highlighted and are illustrated by **Figure 8**. These are: (1) There are no major changes expected with respect to the onset and/or cessation of rainfall seasonality for both the Boucle du Mouhoun and Sahel regions of Burkina Faso. (2) RCP45 projects longer (>5 days) and less frequent dry spells than at present, whereas RCP85 shows more frequent and longer dry spells (>5 days), as compared to presently. (3) With RCP45 and RCP85, one should expect more frequent but less severe heavy rainfall for both scenarios.
69. **Overall conclusions:** In sum, climate in Burkina Faso is projected to become significantly hotter, and such warming, in regions with high average air temperatures, could amplify the impact of water shortages and droughts. While rainfall projections are less certain, Burkina Faso has experienced large, natural variations in mean rainfall on decadal time scales. If rainfall decline occurs, the effects of warmer air temperatures could exacerbate the impact of this dryness. Composite impacts of other climate related factors such as wind speed and strength, as well as differences in day and night temperatures have not been explored more fully.
70. [Section 1.3](#) further down expands in some detail on the key impacts to and vulnerabilities of sectors directly related to this project -- i.e. the agro-ecological and hydrological systems. See also Annex 1 and Figures below, from the PPG Study.

⁵⁶ Hoerling et al (2006). Detection and attribution of twentieth-century northern and southern African rainfall change, *Journal of Climatology* 19: 3989-4008.

Figure 6: Projected difference in temperatures between 2021-2050 from 1970-2000 (results from 8 models and - bottom-right - average of all the models); source Diasso 2013 (PPG study)

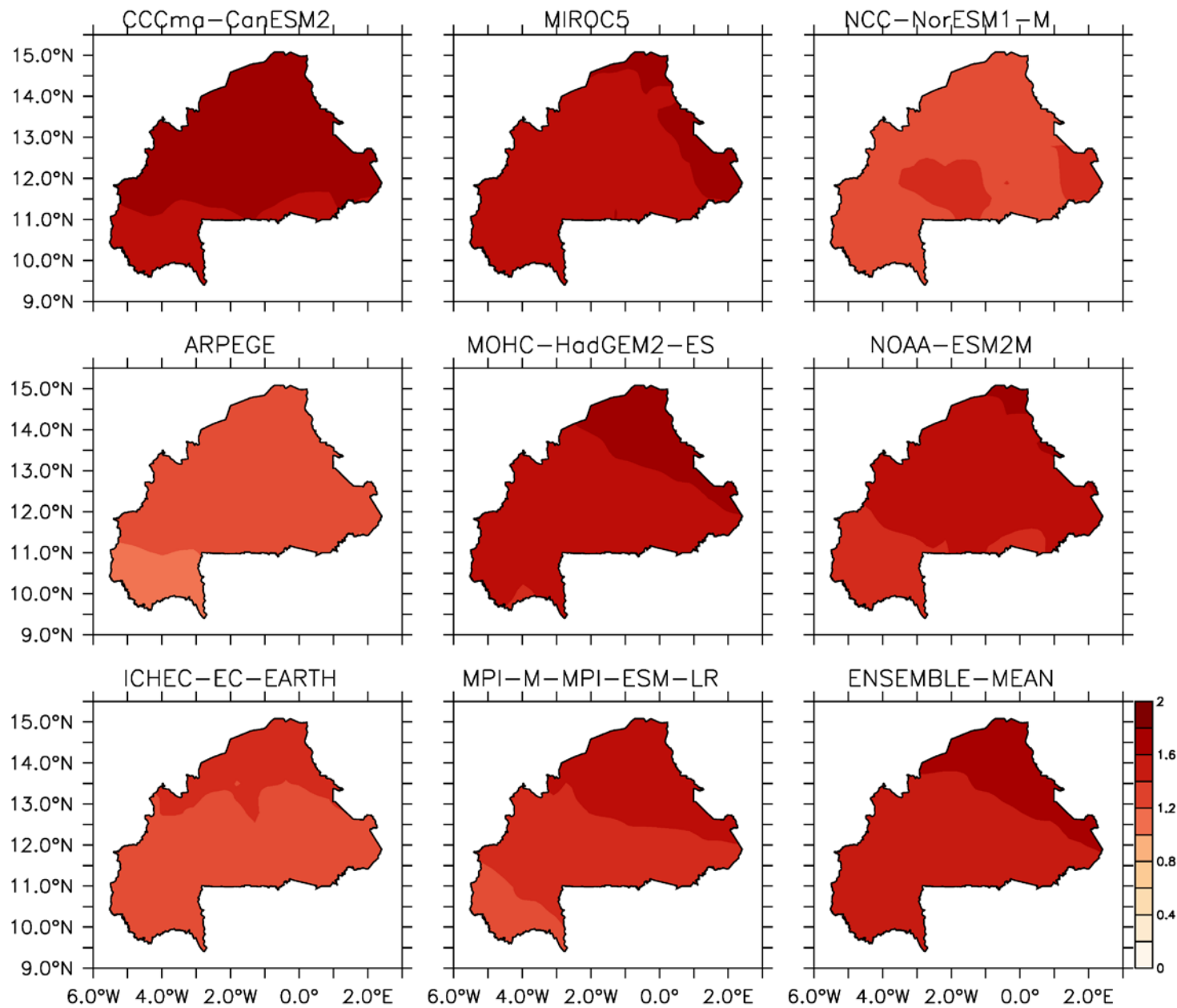
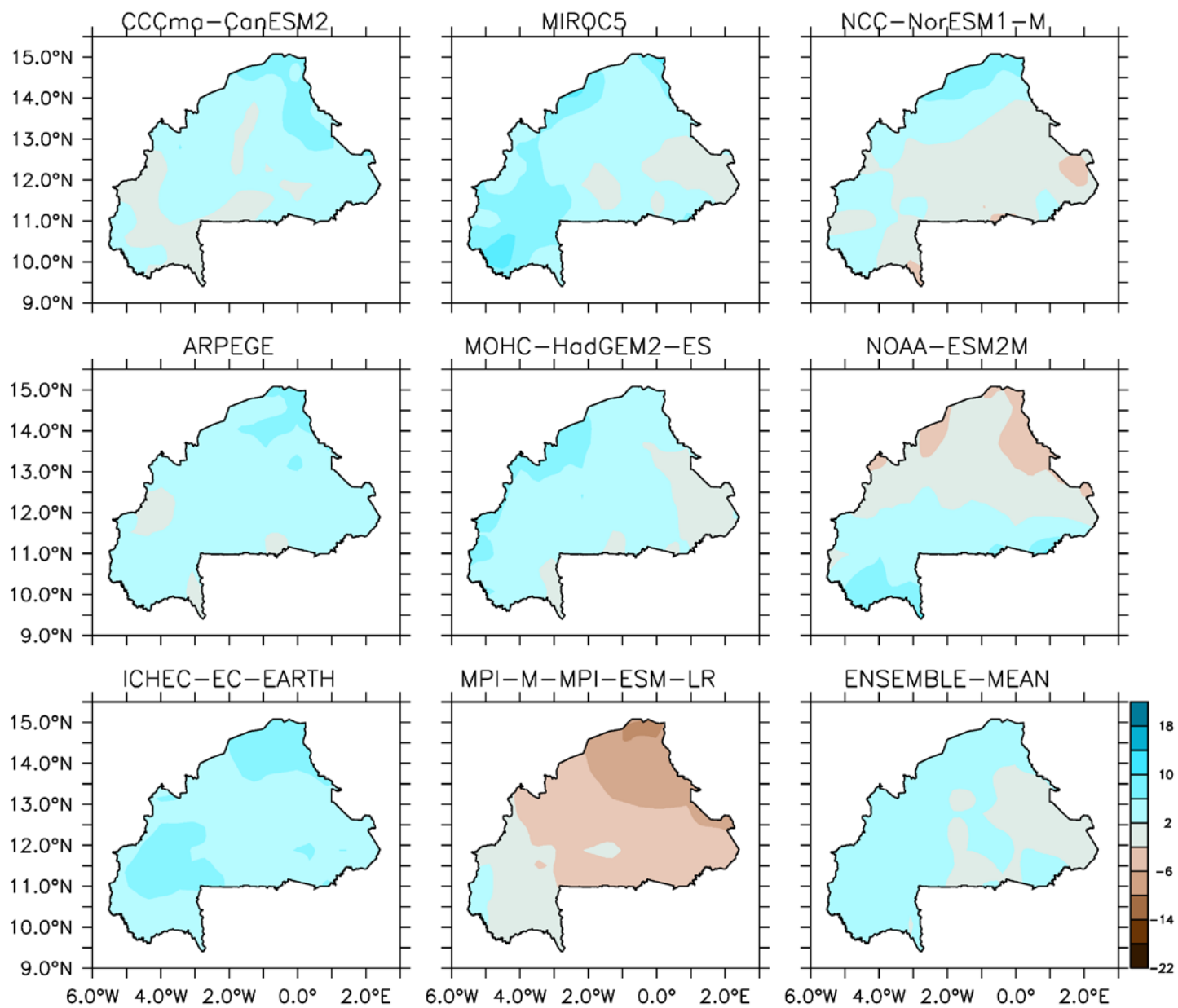


Figure 7: Projected difference in rainfall between 2021-2050 from 1970-2000 (results from 8 models and - bottom-right - average of all the models); source Diasso 2013 (PPG study)



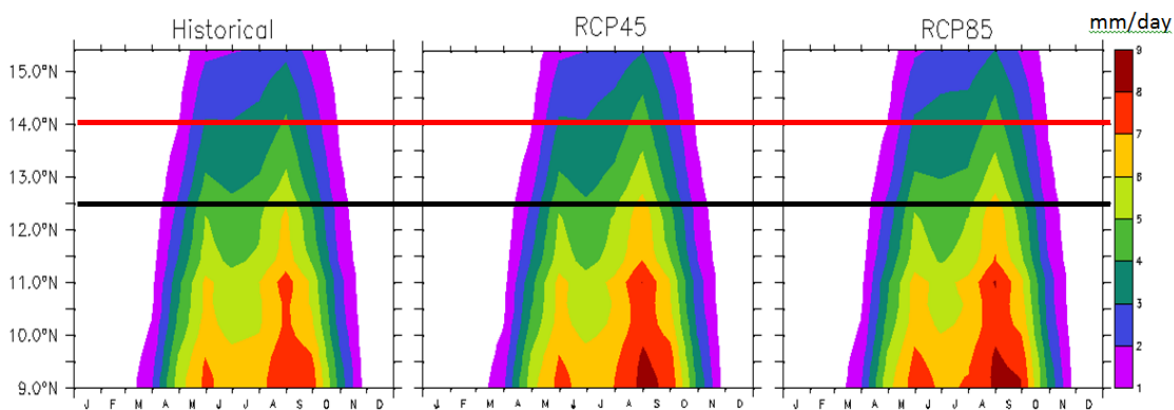


Figure 8: Comparison of onset-cessation between historical (1971-2000) and projections (2021-2060) over the boucle du Mouhoun (black line) and Sahel (red line). Source Diasso 2013 (PPG study)

1.2.3 Forecasted impacts of climate change on ecosystem services in the project zone

71. Generally speaking, the impacts of climate change on agro-ecological system involving wetlands, such as the MdO Wetlands Basin, and riverine ecosystems, such as the BdM Forest Corridor, are complex. The cascading effects of climate-induced changes on the trophic community and physical element of these systems can be difficult to predict. Yet, certain patterns will likely be observed.
72. Wetlands may e.g. decrease in size under warmer conditions or due to changes to inflow. The recharge of lakes and wetlands in the MdO site depend almost exclusively on rainfall and surface runoff. Ephemeral (vernal) wetlands are particularly vulnerable to climate change. This is the case of Tin Eidar, Ganadia, Yom Boli and Beldia in the MdO Wetlands Basin. Even the permanence of both the actual Mare d'Oursi, the largest lake, and of Lake Darkoye, the second largest, may be at risk from climate-induced phenomena. Natural grazing grounds will be significantly diminished and livestock watering made difficult under climate change scenarios. The sustainability of even extensive nomadic pastoralism, which is the predominant land-use in the MdO, may be in peril.
73. For river ecosystems, including gallery forests, higher ambient temperatures lead e.g. to greater metabolic costs for a number of different living organisms. This will negatively affect biomass production, impacting tree growth, but also populations of fresh water fish. Climate change will very likely lead to possible changes in species density, distribution and community relationships. Species' ranges may shift and so will the composition of forests, which in the BdM Forest Corridor are a mix of natural and managed landscapes. Phenology, such as spawning and migration, may be altered. Life history traits for a number of different freshwater species are affected by water quality and chemistry and seasonal flow regimes. These will likely be altered by climate change driven changes in precipitation and runoff.
74. It is worth noting that for both sites, hydrological systems are likely to be some of the most affected by climate change. Experts also point out that, even within a scenario of increased rainfall, the water scarcity problem in project sites—and in Burkina Faso in general—is still likely to be exacerbated, due to the other predicted climatic patterns (decreased surface runoff, increased temperatures and change in rainfall seasonal distribution). Altogether, changes to current and historical rainfall patterns will lead to changes in the hydrological regime, leading to significant changes in water

availability. More importantly, as a result of climate change, the water table in both in the BdM Forest Corridor and in the MdO Wetlands Basin will experience more frequent and sudden drops. Drastic reductions in water availability at critical times (e.g. in the dry season or in drought years) and at critical locations (e.g. in the more populous areas or where livestock congregates) will have a direct and catastrophic impact on livelihoods of communities in the two project sites. Changes in hydrological systems may also include increased siltation and riverbank erosion, especially in a meandering river, such as the Mouhoun. These changes will be either driven by climate change or exacerbated by it.

75. In the MdO Wetlands Basin, the availability of pasture is directly linked to water availability and to stocking levels. As seen, water availability will be strongly influenced by climatic change and increased variability. Overstocking and overgrazing are a common seasonal problem in the mentioned project site. Since the expansion of pastoral land is limited both by other land-uses and access to water, a common coping strategy applied by pastoralists is to increase livestock population on shrinking pastoral land—and preferably onto lands that are closer to water sources. The problem is that increases in livestock populations in the MdO Wetlands Basin often surpass the carrying capacity of the area's resource base. While this avoids understocking and provides security to herdsmen and -women, an obvious negative result is a marked decrease in land productivity and loss of natural assets. At times, this situation leads to localized conflicts between transhumant and sedentary communities, especially during the drought periods, when grazing grounds and water resources are particularly scarce. While these problems are not, in and on themselves, climate change related, experiences with the current climatic variability indicate that these conflicts will necessarily be exacerbated by climate change, driven not just by the already mentioned changes in hydrology, but also in the phenology of grass species. The natural vegetation in the MdO area is a mixture of annual grasses and forbs (*Cenchrus biflorus*, *Schoenefeldia gracilis*, *Panicum laetum*, *Zornia glochidiata* DC.), as well as trees and shrubs, most of them spiny (*Acacia* sp., *Zizyphus mauritiana*, *Balanites aegyptiaca*). These plants represent some 90% of the diet for livestock. However, although generally resilient, not all of these plants will withstand the more pronounced climatic variability that is expected from climate change. According to a botanical criteria e.g., the northern limit of the grass species *Cenchrus biflorus* defines the southern boundary of the Sahara. Should this boundary move further south due to the expected effects from climate change (water scarcity, increased temperature, marked changes in rain seasonality), the impacts on grazing grounds in the MdO may be catastrophic, leading to the a break-down in livelihoods and in the fragile balance that characterizes the group relations in these northern Sahelian societies.
76. Among other predictable impacts, climate change is also expected to result in a marked increase in the incidence and intensity of bushfires in Burkina Faso. The degree of these effects is however difficult to predict vis-a-vis climatic variables. In Burkina Faso's savanna biome, fire regimes are closely related to the amount of standing herbaceous phytomass that varies in quantity and composition over space and time, e.g. according to topography, land use, pressure of herbivores and climatic variability. Finer resolution modeling would be needed to identify the most vulnerable forests. Yet, higher temperatures and increased evapotranspiration across typical landscapes of Burkina Faso will certainly create the conditions for bush-fires to spread out of control and impact larger areas. While people in the BdM Forest Corridor use fire for improving soil fertility and enhancing the regeneration of pasture, if out of season, out of control and too frequent, fire can have catastrophic impacts on livelihoods, notably because of the importance of pastoral and wild resources for the rural societies in question. A recent and comprehensive study on savanna fire regimes with focus on western Burkina Faso (the approximate location of the BdM Forest Corridor), has shown that changes in land use and climatic variability are likely to have an effect on

the fire regimes.⁵⁷ However, we do not know enough about how fine-tuned to particular fire regimes specific sites are. The study further notes that protected areas with higher density of wooded vegetation are more prone to fire.⁵⁸ With the current pressures to these protected sites from agricultural encroachments and the expansion of cultivated lands adjacent to the forests, fires may more often than not become out of control and spread to settlements and agricultural landscapes. It may also undesirably destroy entire forest patches with significant economic loss, besides introducing untimely ecological disturbances. This would warrant a more precautionary and climate-adapted approach to fire regimes and fire management across the BdM landscape in scenarios of climate change to avoid catastrophic effects of fire in different agro-ecological systems.

77. In sum, agro-ecological and hydrological systems display a number of climatic vulnerabilities linked to natural and social assets such as water, pasture, forests, livelihoods and land use systems. Under the current regime, the BdM Forest Corridor and the MdO Wetlands Basin are being managed and utilized to satisfy the most immediate needs of riparian communities. They provide food, fresh water, fiber and fuel. During periods of drought, the Mouhoun River and Lakes Oursi and Darkoye are the only sources of freshwater in a very large perimeter. Livelihoods and societal relations in both zones are deeply dependent on the continued stream of services that agro-ecological and hydrological systems provide. With the foreseeable impacts of climate change, these systems will start to breakdown and degrade beyond a level that can sustain livelihoods. This is the baseline management of natural and social assets for this proposed project.

1.3 Threats, Root Causes, Barriers and Solutions

1.3.1 The preferred long-term solution

78. In the riparian areas of the Boucle du Mouhoun Forest Corridor (BdM) and the Mare d'Oursi Wetlands Basin (MdO) in Burkina Faso – the two project zones selected to be the focus of this intervention⁵⁹ – some 150,000 people are directly dependent on natural assets such water, pasture, forests and fertile soil for a living. Although the use of these resources have undergone a certain degree of degradation over the years, the current regimes pertaining to natural and social assets in project sites have so far managed sustain a stream of services to the majority of resource users. E.g. every year during the dry season, Sahelian lakes in the MdO Wetlands Basin receive 15-20 thousand heads of cattle that find in the lakes and adjacent ponds the only viable source of water and fresh pasture. This pendular movement of livestock and nomadic pastoralists has been going-on for more than three centuries, although livestock numbers have increased significantly in the past 20-30 years. The MdO lakes are also generally resilient to the occasional impact of sandy winds and the natural variations in water levels. The BdM Forest Corridor sustains the legal production of approximately 1.4-1.6 million m³ of wood from some 175,000 ha of gazetted forests – wood that is either sold as firewood locally or transformed into charcoal for sale both in small and large urban centers.⁶⁰ In addition, these same forests avail a number essential NTFP for the use by local communities. Riparian forests in the BdM also play a key role in maintaining soil fertility and avoiding the erosion of riverbanks, besides sustaining important ecosystems. The Mouhoun River itself sustains several production systems generally based on the availability of surface water all year round: livestock,

⁵⁷ J.-L. Devineau et al. *Savanna fire regimes assessment with MODIS fire data: Their relationship to land cover and plant species distribution in western Burkina Faso (West Africa)*. Journal of Arid Environments 74 (2010) 1092-1101.

⁵⁸ Ibid.

⁵⁹ See descriptions in [Section 1.6](#).

⁶⁰ In 2011, large scale illegal wood cutting activities have been observed in the northern border of the Deux Balés National Park, reaching possibly one fourth of legal quantities in the Forest Corridor (verbal comment by local forestry officer in Dedougou, Boucles du Mouhoun).

irrigated crops and freshwater fishing, which are essential for communities' food security for the local economy.

79. Climate change effects such as higher temperatures, marked changes in precipitation and in the rainfall regimes, and a significant decrease in surface runoff will result in increased incidence and intensity of bushfire, water scarcity and significant changes to water flow regimes in key water bodies. The latter may include both flooding and the complete cessation of dry season flows. These impacts will create vulnerabilities that are either climate-driven or that will be exacerbated by climate change.
80. Although agro-ecological and hydrological systems in project sites hang on fragile balance due to a gradual degradation that the systems are experiencing, these same systems are currently resilient. Furthermore, in spite of widespread poverty, it can be said that communities in both project sites are currently maintaining their livelihoods within a coping range. However, with the effects of climate change, both the agro-ecological and hydrological systems and people's livelihoods will reach a tipping point. If left unchecked, climate change will lead to a rapid—and perhaps irreversible—collapse of agro-ecological and hydrological systems in project zones. With climate change, the vast array of services rendered by these systems will breakdown and so will the viability of livelihoods that they sustain.
81. **The preferred solution** proposed by project is to reduce the vulnerability of Burkina Faso to anthropogenic climate change with focus on the management of natural and social assets in the BdM and MdO sites. In tandem with vulnerability reduction measures, the project will also strengthen the resilience of both these livelihoods and of agro-ecological and hydrological systems to withstand additional climate stressors.

1.3.2 Barriers to achieving the solution

82. The project adopts a barrier-removal approach to the climate problem outlined in the previous section. **There are three sets of barriers** that apply to this project:
 - 1) The knowledge and understanding of climate variability and change-induced risks in the project targeted areas remain limited; existing knowledge products do not include sound analysis and are not reaching relevant stakeholders.
 - 2) The vulnerability of key agro-ecological and hydrological systems of the BdM and MdO is only partially known and not adequately addressed by the various development interventions in the project zone.
 - 3) Climate change risk, vulnerabilities and resilience are not sufficiently mainstreamed into local and regional development planning and finance is to guide on-the-ground development.
83. Refer to the Barrier Matrix in Annex 1 for an overview of the threats and impacts that relate to the project vis-à-vis the stated barriers. This is elaborated through an analysis of their root causes and management challenges, followed by the proposed solutions (for barrier removal), which formed the basis for the overall project strategy.

1.4 Baseline Analysis

1.4.1 The status quo of ecosystem management in project sites

84. In general, agro-ecological and hydrological systems in Burkina Faso – and in the project zone, more specifically – display a number of climatic vulnerabilities linked to natural and social assets.

These assets are water, pasture, forests, livelihoods and land use systems. Under the current regime, the BdM Forest Corridor and in the MdO Wetlands Basin are being managed and utilized to satisfy the most immediate needs of riparian communities. They provide food, fresh water, fiber and fuel. During periods of drought, the Mouhoun River and Lakes Oursi and Darkoye are the only sources of freshwater in a very large perimeter. Livelihoods and societal relations in both zones are deeply dependent on the continued stream of services that agro-ecological and hydrological systems provide. With the foreseeable impacts of climate change, these systems will start to breakdown and degrade beyond a level that can sustain livelihoods. This is the baseline management of natural and social assets for this proposed project.

1.4.2 Institutional response to climate variability

National level

85. Burkina Faso's National Adaptation Program of Action (NAPA) identifies four key sectors as being the most vulnerable to climate change: agriculture, water resources, livestock and forests/biodiversity. Burkina Faso's choice of a programmatic approach not only addresses urgent and immediate needs through an identified set of adaptation priorities but also allows for the development of medium- and long-term adaptation strategies. The approach targets the most vulnerable populations, who are to be found among poor rural communities, notably women, young people and small-scale farmers.
86. Since Burkina Faso published its NAPA in November 2007, many initiatives have been developed and implemented in response. Three projects funded by GEF, Danish and Japanese government have been implemented as NAPA follow up program with UNDP as the execution agency. The first project, sponsored by GEF/LCDF (US\$ 2.9 million) focused on implementation of the best agro-sylvo-pastoral adaptation practices. The second project was funded by Danish cooperation and executed by WWF (US\$ 870,000); its activities focused on sensitization of decision makers at national, regional and local level. Activities focused on capacity building of civil society organizations in the area of climate variability and change was implemented by IUCN. The third project, funded by Japanese Government (US\$ 2.9 million), encourages the integration of climate-related aspects into planning processes at all level. To do so, the experience accumulate with the development of capacities in key institutions, as well as in the mid- and long term multisectorial capacity, led to the preparation of the National Adaptation Plan (embedding a CCA mid and long term strategy). In addition, climate infrastructure has been improved by placement of 16 new weather observation stations, 2 hydrometric stations and a high performance server. These three are winding down currently, and offer lessons learned considered during the development of this project.
87. Capacity building for better consideration of concerns related to climate change is a cross-cutting theme amongst the various active climate change projects⁶¹. In 2012, NAPA coordination was strengthened by the recruitment of additional project staff, who promote the implementation of NAPA-related activities. (A NAPA coordination activity report for 2012 is available.⁶²)

⁶¹MECV (2012). NAPA activities report. Available from: [\[Link\]](#) (Accessed November 2013).

⁶² *Ibid.*

Other relevant national and regional related initiatives that already address the climate problem

88. The project will build on and complement ongoing climate change adaptation initiatives. At present there are many such initiatives, but fortunately SP-CONEDD (the Executing Agency for this project) is at the center of these, with responsibility for coordination of all NAPA-related initiatives. Some of the key ongoing initiatives are (others described later in relation to specific efforts):
89. **The UNDP-Japan Africa Adaptation Program (AAP):** Burkina Faso's participation in this initiative focuses on planning mechanisms, institutions, policies, financial options and the knowledge base that will be needed to respond to climate change in the years to come. At the national level, the focus is on (i) establishing a dynamic, long-term planning mechanisms to cope with the inherent uncertainties of climate variability and climate change; (ii) strengthening leadership capacity and institutional frameworks to manage climate change risks and exploit related opportunities in an integrated manner at local and national levels; (iii) implementing climate-resilient policies and measures in NAPA priority sectors; and (iv) developing capacity to mobilize financial resources to meet national adaptation costs at national and local levels.
90. **The PANA-BKF UNDP/DANIDA:** aka the Danish funded project *Adaptation to climate change for the improvement of human security in Burkina Faso* includes a component for civil society that is run by IUCN. The project has been successful in bringing NGOs and CSOs into the implementation of relevant measures that contribute to adaptation to climate change through a behavioral approach. Key beneficiaries are stakeholders at the decentralized level.
91. The 'PANA-DANIDA' program is now closed and the APP reached its final stages in late 2013/early 2014. Yet, their legacy is important. In addition, other follow-on initiatives are initiating or in the pipeline at this stage.
92. **The Global Climate Change Alliance:** in the EU pipeline for the period 2012-2016, the project aims to strengthen the capacities of West African countries and regional stakeholder to formulate and implement policies and strategies for integrating climate change into plans and development programs.
93. **UNDP Regional project 'Africa Climate Adaptation and Food Security':** Financed by the government of Japan for the period 2013-2015, this regional project is part of the TICAD V initiative (Fifth Tokyo International Conference on African Development). It is slated to enhance the capacity of African countries to adapt to current and projected impacts of climate variability and change that affect food security and other development priorities, by strengthening climate risk management and pursuing climate-resilient development paths. It complements several national and other regional initiatives, in particularly those lead by UNDP. Burkina Faso is one of the beneficiary countries.

Sub-national level

94. Initiated in 2009, the LDFC project to enhance Burkina Faso's resilience and adaptation capacity to climate change risks in the agro-sylvo-pastoral sector worked in the Northern, Center, North and South-western parts of the country. Focused on facilitating changes at the local level, this project worked in 6 villages, with a total population of approximately 15,000, to develop strategies to adapt to climate change.
95. A related UNEP-GEF project, "Protected Areas Resilient to Climate Change in West Africa

(PARCC)⁶³, is working in 8 West African countries including Burkina Faso. The PARCC project aims at designing scientific tools to help make protected areas more resilient to climate change, and at developing capacity in the countries to use these tools.

96. Otherwise, most of the climate change adaptation initiatives to date have focused on building national level frameworks, strategies, and management capacities.
97. Burkina Faso is in the process of revising its NAPA to make it more comprehensive, and to look at mid- and long-term adaptation needs. Although much good work has been carried out, efforts at ground level still remain limited and the country still has far to go in order to build the necessary resiliencies.

1.4.3 The project's development baseline

98. Under the project's baseline, a range of activities relating to the management of water, forests, pasture, fire and land, would be undertaken, coupled with activities that strengthen livelihoods. Those would have positive impacts on the management of natural and social assets, including through relevant interventions in the BdM Forest Corridor and the MdO Wetlands Basin. Many of these activities are supported by donor-financed projects, programs and initiatives. They provide a solid baseline finance upon which the proposed LDCF investment will take place. In some cases, these programs and initiatives provide the required co-financing to the present project (see section 2).
99. Baseline interventions include six groups of relevant projects, programs and initiatives:
 - 1) **UNDP Programs co-supportive of the project.** Total baseline amount under UNDP programs reaches \$32.6 million, part of which is co-financing the project. The following are the projects and programs:
 - **UNDP/UNCDF ACRIC:** Support to Rural Communities and Inter-Community Initiatives. Funded by UNDP, UNCDF and the Governments Germany and Burkina Faso and active since 2009, the project aims at developing local planning tools, building local governance capacity and initiating local dynamic economies. The project is active both in the Boucle du Mouhoun and in the Northern Region. It is implemented by the Ministry of Land Use Planning and Decentralization (MATD). The ACRIC project amount of \$3 million can be considered as baseline finance to this project.
 - **PTMF:** Multi-Functional Platforms, Burkina Faso. The program's focus is to reduce poverty in the rural and peri-urban areas of Burkina Faso by promoting access, especially by women, to the modern energy services that are essential for economic growth and well-being. A multi-functional platform (MFP) is a diesel engine placed in the heart of villages in Burkina Faso and under the care of a group of organized women. The MFP powers devices such as water pumps, grain mills and generators. This has proven to be a powerful way to promote local economic and social development. As many as 235 village communities in Burkina Faso, mostly in the Boucle du Mouhoun region, have already benefitted from MFPs. The program counted on funding from the Government, UNDP, the Bill & Melinda Gates Foundation and the Government of Luxemburg. Between 2010 and 2013, an investment of more than \$28 million has been made, of which \$6.1 million is considered as part of the baseline for this project. For the period 2014/16 we expect further investments to be confirmed and which will co-finance the project amounting to \$6.1 million.
 - **COGEL:** The UNDP-financed project Consolidation of the Local Environmental Governance was approved in October 2011 and it counts on \$4.0 million in UNDP core funds (TRAC) plus \$630K from government. Operating at both national and sub-national levels, the project focus on strengthening relevant structures and community based organizations to integrate a practical approach to sustainable development and natural resource management as a means to roll-out the National Strategy for Accelerated Growth. An amount of \$4.6 million from COGEL contributes to the baseline of this project (but not co-finance it).
 - **Local and Administrative Governance, Decent Employment Program Sub-regional Support Programs (Boucle du Mouhoun and Sahel):** Four programs addressing local level planning & governance on the one

⁶³ See [Link](#)

hand, and on the other, similar issues at the sub-regional level, in addition to programs that address poverty & security issues across the country are co-supportive of the broader goals of resilience promoted by UNDP. They represent an estimated baseline of \$10 million for the duration of the project, of which \$3.1 million will co-finance it.

- **GFCDR and UNDP DRR:** Two projects, (i) Global Facility for Disaster Reduction and Recovery's (GFDRR) Mainstreaming Disaster Reduction in Burkina Faso and (ii) UNDP's Strengthening National Capacities for disaster management and crisis mitigation in Burkina Faso, are relevant for the baseline of this project. Both are concerned with disaster risks, which may or may not be linked to climate change. Both project focus on the development of national capacity to manage such risks and to mitigate the effects of a crisis before and after it is installed. Flooding is an unusual type of disaster for Burkina Faso, but which brought devastating consequences to the country in 2010. It also affected the Mouhoun river basin among others. Both projects represent a development baseline of \$6.4 million vis-a-vis the proposed LDCF project.
 - **A new African sub-regional initiative** Project 'Peace Consolidation and Governance in the Sahel' will be active in the period 2014/15 and co-benefit Burkina Faso. It represents a baseline of at least \$2.5 million, which will also co-finance this project.
- 2) **Various land management, forests and water programs from multiple sources of funds.** Total baseline amount for these programs is estimated at \$50.1 million, broken-down as follows:
- **PNGT2/3:** National Land Management Program (World Bank co-financed under its Community Based Rural Development Project). The second phase of the Program started in 2008 and it has been supporting rural communes in planning and implementing local development activities in a participatory and sustainable manner. A third phase started in late 2013. This WB Project contributes to the second phase of the National Program for Decentralized Rural Development. It has three main components: A) Strengthened capacity for decentralized rural development; B) Local Development Financing; and C) Rural Land Tenure Reform. Behind the project's implementation is a massive investment of \$103 million, of which the Bank committed \$73 million. Some 3000 villages were covered by the implementation of more than 18,000 micro projects and various capacity building activities. In essence, the project deals with the management of natural resources, livelihoods and productive systems. Climate change is not a key consideration in the project's current design. Hence the project is not currently addressing adaptation needs. A total of \$4 million has been deemed relevant for the development baseline of this project.
 - **AfDB-PLCE** - Silt Control in the Niger River Basin / Niger River Basin Authority, Burkinabé Component. The project is regional and it is financed by the African Development Bank (AfDB). Having started in 2005, it has produced a number of interesting results, including the development of protocols and on-the ground action for avoiding and remediating river and lake siltation, the fixation of 5,000 ha of dunes in Burkina Faso alone and the strengthening of the technical, managerial and financial capacities of local communities to ensure proper ownership and the sustainability of the various development works. The Burkinabé Component of the AfDB-PLCE was estimated at \$7.1 million, contributing to the baseline. Much of the funding has already been spent into consolidated investments in capacity development and activities on the ground. The amount of \$3.2 million will co-finance for this project.
 - **OFINAP & APFLN:** The National Office for Protected Areas (OFINAP) and the National Agency for the Promotion of Non-Timber Forest Products (APFLN) are implementing a number of relevant programs and projects linked to the protection of forests, including, but not exclusively, in protected areas. Those include the Deux Balés National Park, which is an important part of the BdM Forest Corridor. The contribution of OFINAP and APFLN to the baseline of current LDCF project is approximately \$4.0 million, of which \$2.9 million will serve as co-financing.
 - **PAGIRE:** Integrated Water Resource Management Plan of Action comprehends both the approach to IWRM in Burkina Faso, as well as a long-term and phased investment program. It was launched in 2003 and with a current horizon till 2015 and it is piloted by the National Directorate for Water Resources (DNRE under MEAHA). DANIDA is a key contributor to PAGIRE, which also attracted a number of other partners and donors. The driving force has been a major overhaul in the water resource management sector. From a funding point of view, PAGIRE counts on eight distinct groups of 'Actions': (1) enabling environment; (2) information system on water resources and their use; (3) program management arrangements; (4) research and development; (5) human resources; (6) information communication, awareness and program pledging; (7) institutional frameworks; (8) urgent measures. Availability of water, a theme under this project, is absolutely central to the PAGIRE, whose total funding envelope for the period 2003-2015 is approx. \$30 million and thus considered as part of the baseline. Climate change is mentioned in PAGIRE key policy and investment

documents, but primarily as an aim to expand knowledge on possible impacts on water resources (more specifically under Action 4.1.2 Improve knowledge on the impacts of climate change on water resources). Neither an analysis of climate change impacts on water resource management for the time horizon of the Action Plan, nor actions that could be categorized as climate change adaptation were explicitly embedded into the PAGIRE. An amount of \$0.6 million is proposed as co-financing through MEAHA.⁶⁴

- **FIP/REDD+ Burkina Faso-AfDB:** The Forest Investment Program (FIP) is one of the three funds created by Multilateral Development Banks (MDB) within the context of the Climate Investment Fund (CIF), to support efforts to reduce deforestation and forest degradation in eight developing countries. With the African Development as the lead MDB, Burkina Faso is currently negotiating a FIP with the Bank and other partners, UNDP being one of them. The FIP aims at promoting sustainable forest management that leads to emission reductions and the protection of carbon reservoirs. It achieves its objectives by providing scaled-up financing for readiness reforms and public and private investments. AfDB is planning an investment of \$30 million. As it is typical of REDD programs, there is a long-term perspective (20, up to 30 years). There is potential to link investments from the FIP to activities under Output 2.2 (in particular those related to forest enrichment in the BdM) and Output 2.3 (climate adaptive fire management) with the aim of up-scaling these investments. For estimation purposes, an amount of \$10 million has been considered as part of the baseline project. Part of this amount, at \$7 million, is presented as co-financing to this project.
- 3) **PRD/SP-CONEDD:** SP-CONEDD receives funding from the Austrian Cooperation through the Regional Development Program (PRD) for a number of livelihoods and environmental management activities. Regional Development Program for the Boucle du Mouhoun (PRD/BMH) is particularly relevant as a baseline program for this project, as significant investments are being made in local communes in the project zone. The program also financed a number of hydrological studies in the Mouhoun-Sourou River basin (i.e. approaching the object of the study as a single basin, though within the boundaries of the Boucle du Mouhoun administrative region). The focus is on the problem of riverbank erosion and siltation. Proposed solutions are primarily infrastructural, though decisions on investments are not yet made. The overall baseline investment has been estimated at \$4 million.
- 4) **AMESD:** The EU funded regional program Environmental Monitoring for Sustainable Development in Africa, which aims at strengthening operational capacity for technologies for land use surveying and remote observation with a view to promoting environmental and climatological applications. For West Africa, ECOWAS adopted the theme of water resource management and the management of crops and pastures. The project was entrusted to the Niamey-based Regional Centre for Training and Application of Agrometeorology and Operational Hydrology (AGRHYMET). The total invested was reported at \$21M in 6 years, reaching the terminal phase in end 2013/early 2104. A new program called MESA (Monitoring of Environment and Security in Africa) has been designed and initially approved for building on the results of AMESD and taking them a few steps further. As arrangements for implementation are still being firmed, MESA was not included in the financial baseline for this project.⁶⁵ Therefore, the financial baseline that AMESD represents was estimated at only \$2 million.
- 5) **CORDEX:** Co-ordinated Regional climate Downscaling Experiment is a new program sponsored by the World Climate Research Program. The aim is to organize an international coordinated framework to produce an improved generation of regional climate change projections world-wide for input into impact and adaptation studies within the AR5 timeline and beyond. CORDEX will produce an ensemble of multiple dynamical and statistical downscaling models considering multiple forcing GCMs from the CMIP5 archive. Initially a 50-km grid spacing has been selected, favoring engagement of wider community. Multiple common domains covering all (or most) land areas in the World have been selected (with initial focus on Africa). Statistical downscaling has been conducted on 9 locations in Burkina Faso based on 30 years observed climate data and for the period of 2050 to 2100. For the purposes of accounting, the financial contribution of CORDEX to the baseline has been estimated at \$1.0 million.
- 6) **Various NGO-driven livelihood programs** are under implementation both in the BdM Forest Corridor and in the MdO Wetlands Basin. These programs work very closely with local communities and strengthen their capacity to cope and be lifted out of poverty in many different ways. The most relevant NGO-driven programs for this project include those by OCADES/PRCC (focusing on river basin protection, integrated rural development and water supply); plus initiatives focused on integrated rural development, disaster risk reduction, sustainable land management by Alliance Technique Assistance au Développement (ATARAN), RICH/ITALIA, ZEPESA, Association pour la Gestion de l'Environnement Durable, and NATURAMA. The latter is especially active in the MdO and the Sourou Valley in the management of Ramsar sites (the latter is located north from the BdM Forest

⁶⁴ Formerly "MAHRH" as in the letterhead of the co-financing letter dated 24-Feb-2014.

⁶⁵ See [Link](#) in the EC's website: The EU boosts its support to earth observation applications in Africa (06/02/2012) (accessed on 28 Jan 2014).

Corridor). These interventions have been estimated at approximately \$1.2 million; part of this is slated to co-finance the project.

100. The overall development baseline for this project reaches approximately \$95.9M. The relevance of baseline projects, programs and initiatives to each of component is detailed in [Section 2.5](#). The following table provides a summary:

Table 2. Overview of the baseline project’s finance per Component

Components	Break-down per component	Total baseline amounts (\$M)								
<i>Component 1</i>	<p><i>Initiatives that contribute to developing systems and improving knowledge management for addressing development and/or climate challenges</i></p> <p>Estimates (\$M):</p> <table> <tr> <td>UNDP relevant projects and programs</td> <td>2.6</td> </tr> <tr> <td>Land, forests and water programs</td> <td>6.0</td> </tr> <tr> <td>PRD SP-CONEDD</td> <td>1.5</td> </tr> <tr> <td>CC Knowledge Mgt support (AMESD, CORDEX)</td> <td>3.0</td> </tr> </table>	UNDP relevant projects and programs	2.6	Land, forests and water programs	6.0	PRD SP-CONEDD	1.5	CC Knowledge Mgt support (AMESD, CORDEX)	3.0	13.1
UNDP relevant projects and programs	2.6									
Land, forests and water programs	6.0									
PRD SP-CONEDD	1.5									
CC Knowledge Mgt support (AMESD, CORDEX)	3.0									
<i>Component 2</i>	<p><i>Livelihoods and other development programs active in the zones and addressing ecosystem/NRM issues.</i></p> <p>Estimates (\$M):</p> <table> <tr> <td>UNDP relevant projects and programs</td> <td>7.0</td> </tr> <tr> <td>Land, forests and water programs</td> <td>40.1</td> </tr> <tr> <td>PRD SP-CONEDD</td> <td>1.0</td> </tr> <tr> <td>NGO-driven livelihoods programs</td> <td>1.2</td> </tr> </table>	UNDP relevant projects and programs	7.0	Land, forests and water programs	40.1	PRD SP-CONEDD	1.0	NGO-driven livelihoods programs	1.2	49.3
UNDP relevant projects and programs	7.0									
Land, forests and water programs	40.1									
PRD SP-CONEDD	1.0									
NGO-driven livelihoods programs	1.2									
<i>Component 3</i>	<p><i>Initiatives that address regional, local or landscape level planning, governance and, to some extent, climate mainstreaming</i></p> <p>Estimates (\$M):</p> <table> <tr> <td>UNDP relevant projects and programs</td> <td>23.0</td> </tr> <tr> <td>Land, forests and water programs</td> <td>9.0</td> </tr> <tr> <td>PRD SP-CONEDD</td> <td>1.5</td> </tr> </table>	UNDP relevant projects and programs	23.0	Land, forests and water programs	9.0	PRD SP-CONEDD	1.5	33.5		
UNDP relevant projects and programs	23.0									
Land, forests and water programs	9.0									
PRD SP-CONEDD	1.5									
TOTAL		95.5								

1.5 Stakeholder Analysis

101. Climate change is a cross-cutting issue that touches most segments of society. Given that natural resource-related activities threatened by climate change are the dominant livelihood activities across rural areas in Burkina Faso, many government and civil society bodies are involved in some respect, particularly at the project local sites in MdO and BdM. As so many could be considered stakeholders to this project, it would not be possible to list them all here, but the following table summarizes the stakeholder groups and the roles they may play:

Table 3: Stakeholders and roles in the project

Stakeholder group	Description or example	Role in project
Ministry of Environment and	Responsible for most environmental affairs in Burkina; wide-ranging	Host of the executing agency, SP/CONEDD. GEF and UNFCCC

Stakeholder group	Description or example	Role in project
Sustainable Development (MEDD)	mandates including Rio Convention coordination and implementation	Focal Points. Supports coordination of GEF CC and LDCF projects (as well as other related projects). Will help ensure (working with SP/CONEDD) project achieves its objectives especially at national level with regards to mainstreaming.
Department of Meteorology	Has jurisdiction over all the matters related to meteorology and its applications in Burkina Faso, including climate related information	Central partner in the development of the SICOFORMO system (the geo-based information system to be developed by this project, described in Part 2, Project Strategy, Output 1.1), esp. climate-related information.
Regional Government	Responsible for regional administration, development planning and implementation. Growing importance in development and investment outcomes due to decentralization process. Important actor for coordination at both project zones (with BdM zone spanning two regions)	Critical to mainstreaming adaptation concerns into regional development and financial frameworks
Local Government	Includes the municipal administration and the villages development councils	Will fully participate in the planning and implementation of activities with local communities. Will benefit from capacity building.
Other Ministries	Various mandates related to the project (water, agriculture, forests, livestock, livelihood building)	Co-supportive of the project, including by participating, as applicable, in the Project Steering Committee.
Research and technical institutes	This includes the national universities (e.g. <i>Université d'Ouagadougou</i>) and research institutes (E.g. National Centre for Scientific and Technological Research, CNRST) involved in agriculture and rural development. This also includes West African technical institutes, e.g. CILSS, AGRHYMET, etc.	These will provide technical inputs (e.g. via a technical advisory body or assurance group – or TAGs) and may serve as service providers (e.g. for the SICOFORMO development)
Traditional decision-making systems	In each village and in each province there are traditional decision-making systems, in addition to the government-supported mechanisms for decentralization and municipal or rural administration	These are a vehicle for introducing new ideas. They can also benefit from informational materials and capacity development under this project
Private sector	This includes small enterprises in the agriculture sectors.	They may be service providers or they may benefit from capacity

Stakeholder group	Description or example	Role in project
		development (UNDP rules of engagement with private sector apply)
NGOs	Local (e.g. NATURAMA) and international NGOs (e.g. CARE, WWF and IUCN) are active in Burkina Faso on a range of relevant issues	NGOs will be service providers particularly at the two project sites. Initial consultations for such possible involvement have taken place during the PPG phase. They will be instrumental in communication strategy development. Also, they can provide technical input to the project e.g. via TAGs
Pre-cooperatives or other small organizations for enterprise	In some villages, pre-cooperative systems exist, to share burdens in terms of workload, debt and access to markets. This is the case e.g. for women and NTFPs such as shea butter, gum arabic, etc.	These groups will benefit from initiatives developed through the local adaptation planning and resilience-building initiatives developed through the project

1.6 Introduction to the Project Zones

102. Two project zones were chosen as the focus of this project from the preliminary discussion stages based on national priorities identified in the NAPA: the **Boucle du Mouhoun Forest Corridor** (see [Section 1.6.1](#) – green site in the map below), which includes an important part of the Mouhoun-Sourou River basin, and the **Mare d’Oursi Wetlands Basin** (see [Section 1.6.2](#) – blue site in the map below). These two sites are notable as they:

- Are highly exposed, sensitive and vulnerable to climate change (as described in the NAPA and confirmed via PPG studies);
- Represent an internationally important wetland/lake, and a large forest corridor generated via a river, both containing Ramsar sites;
- Local people in these areas are highly dependent on natural resources for their livelihoods – livelihoods that will be threatened by the exacerbation of the current climatic variability and climate change;
- Communities here show willingness and demand to try new adaptation approaches;
- There are existing capacity development initiatives and/or investments in adaptation initiatives can be linked to;
- Present cases where return on investment are likely to be greatest; and
- Have reasonable accessibility in light of the need for monitoring and evaluation (see note on MdO site in this regard).



Figures 9 and 10: Project intervention zones shown on a national and regional scale; source: Google maps and Google Earth

103. More detailed information on the selection of sites within these areas is presented below. The project zones are large on a national scale, and indeed on a regional scale - see Figures 8 and 9, wherein blue is the MdO region, and green is the BdM region.

1.6.1 Boucle du Mouhoun Forest Corridor

104. The more humid of the two project intervention sites, the Boucle du Mouhoun forest corridor (BdM) covers a considerable 34,000 km². It straddles five provinces on both sides of the Mouhoun River - as it is known by the Burkinabe, but also called the ‘Black Volta’ as it flows through Côte d'Ivoire and Ghana. The forest corridor is strongly influenced by the river, which is Burkina’s largest, as well as being its only perennial rivers.⁶⁶ A combination of the river’s winding course and the flat topography create numerous wetlands, especially during the rainy season. This unique geographic setting generates a variety of microclimates and a diversity of ecosystems (aquatic, terrestrial and transitional), many of which harbor an exceptionally rich flora and fauna (including some 300 elephants). The river is also rich in ictiological (fish) resources that are a significant source of protein for the surrounding communities.

105. The ‘fluvial corridor’ stretches from the northern bend of the Mouhoun River (where it meets the Sourou River) all the way south to the Deux Balés National Park. It is of critical importance to the migrations of large mammals that cut across the entire region and beyond (e.g. elephants, antelopes). The Sourou River Valley (La Vallée du Sourou - an affluent of the Mouhoun, north of the area considered as the Forest Corridor) is a Ramsar site (1BF015⁶⁷) and the Lake Sourou an Important Bird Area (IBA BF003⁶⁸). A gap of patched agricultural lands separates the Boucle du Mouhoun Forest Corridor from the Sourou Wetlands. Gazetted since the French colonial administration, an almost continuous chain of twelve protected forests border the Mouhoun River on each side. Together with the Deux Balés National Park, the protected estate in the zone tallies 327,000 ha. However, the level of conservation effectiveness varies, and many of the Classified Forests are only “paper reserves”. Human pressures have indeed fully impeded onto the conservation buffers. Pressures on the Classified Forest are considerable from charcoal production, despite a permit system in place for this. Barry et al (2005, 55) note that in 1996 alone, over 105,000 ha were

⁶⁶ Some sources indicate Burkina has one perennial river, some say two, and others say “few”; the British Geological Survey suggests it is only one. See BGS. 2002. Groundwater Quality: Burkina Faso. [\[Link\]](#).

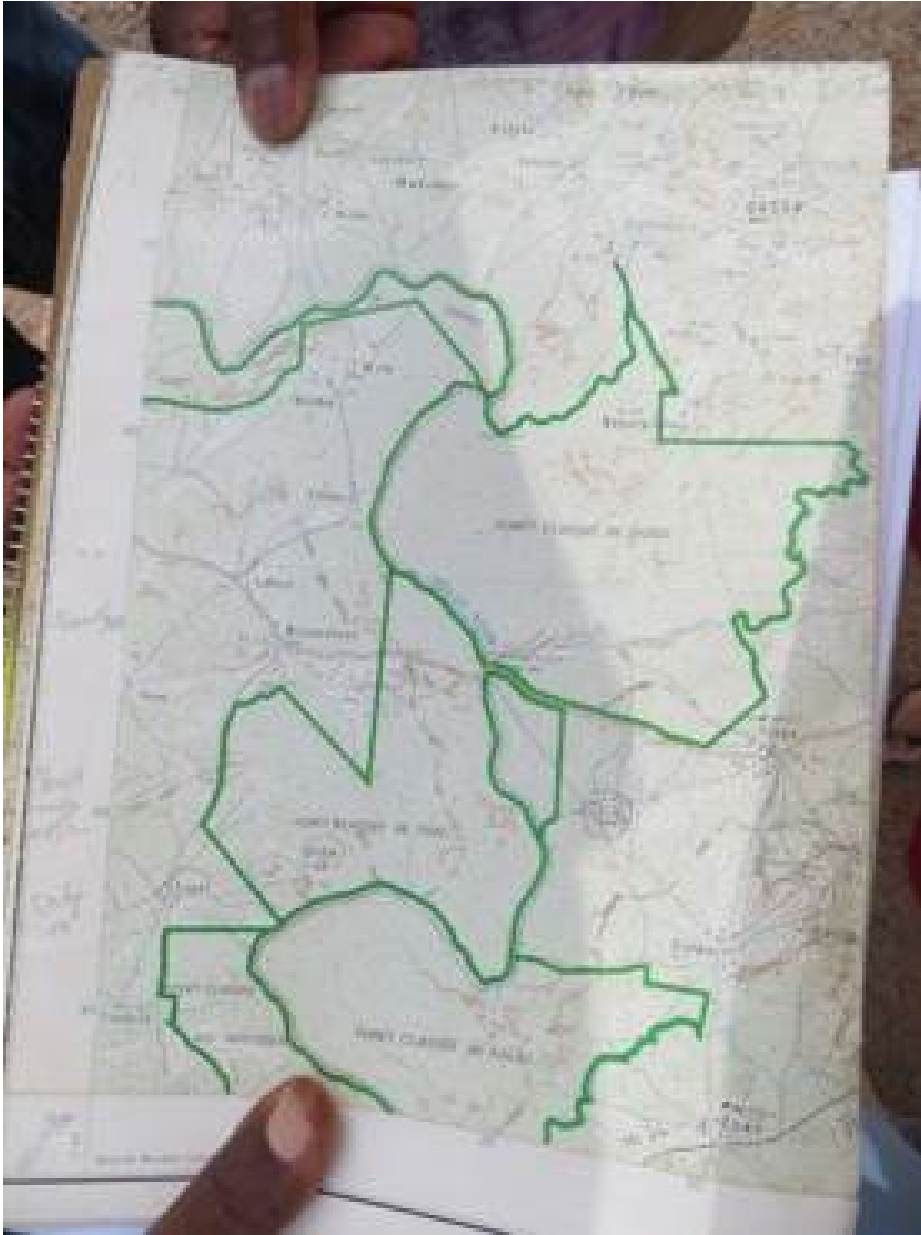
⁶⁷ See [\[Link\]](#) in Ramsar Convention’s site.

⁶⁸ See [\[Link\]](#) in Birdlife’s site.

deforested, mainly driven by land conversion for agricultural coupled with charcoal production. Still, these forests play some protective role vis-a-vis floodplains and riverine landscapes.

106. Approximately 120,000 inhabitants are estimated to live in local communes covered by the Forest Corridor, mostly outside of formal protected areas. Provinces of the Boucle du Mouhoun administrative region are in turn known as the country's "bread basket" (see e.g. AGRA 2009). The region's productivity and economic contribution has recently diminished due, in large part, to lack of agricultural investments and less than adequate infrastructure. The northwestern part of the Boucle du Mouhoun region is also the site of one of the country's largest irrigation schemes and agro-industrial complex. At the "elbow" of the Mouhoun River, north of Dedougou, a dam is established. Here water is being abstracted with the help of the Léry dam for usage by towns such as Koudougou, Boromo, Poura; but minimum flow is maintained, due to the need to respect international agreements at the level of the Volta Basin. A Millennium Challenge Corporation (MCC) project is operational here to improve the infrastructure for additional irrigation (see e.g. MCA 2011).
107. Despite its enormous importance, the river looks at first sight surprisingly small⁶⁹ - and it is facing huge pressures up and down river (e.g. in Ghana) for various uses such as support of water supply to towns, irrigation for agriculture production, damming. Uses along the river where the forest reserves are established are mostly for watering livestock and increasingly for irrigation.
108. Upstream abstraction is of vital importance not only for water supply to larger cities and settlements but also for irrigation purposes (see above). The impact of this abstraction on the downriver water system has not been established, but it is asserted that the established Forest Corridors are a critical buffer for natural water reticulation and rehabilitation. Thus the investment into EBA activities to strengthen the conservation of the Forest Reserves is seen to be of vital importance to the maintenance of ecosystem services along the Mouhoun basin. During consultations and the regional workshop in BdM during the PPG phase, discussions guided the refinement of a set of criteria to select the villages that would serve as project intervention sites within the BdM, detailed in **Table 4** further down.

⁶⁹ Yet in terms of surface, the Mohoun river is the largest of the three other tributaries of the Volta Basin, with 140,000 sq. km (the Nakabé/White Volta covers 106,000 sq. km and the Oti, in Togo, 72,000 sq. km (McCartney et al. 2012).



Images 1 and 2:
Left: A system of Classified Forests exists along the river borders; Right: charcoal production is a huge pressure on the forest resources. Both images courtesy Juliane Zeidler.





Images 3 and 4: Left: Léry Dam is at the “elbow” of the Mouhoun, north of Dedougou. Here water is diverted for use by nearby towns, and the MCC is currently improving the infrastructure for additional irrigation. Right: Fisheries resources are important for food and nutritional support. Both images courtesy Juliane Zeidler.



Images 5 and 6: despite huge importance to Burkina Faso, the Mouhoun is a relatively small river. Both images courtesy Juliane Zeidler.



Images 7 and 8: Mango and Cashew trees are commonly integrated into agro-forestry systems in this area. It is not clear in how far these and related products are developed and commercialized.

Both images courtesy Juliane Zeidler.

Table 4: Project sites selected in BdM region

Criteria	Sites selected	Villages concerned	Justification
<ul style="list-style-type: none"> Site sensitivity to ecological degradation, and influence its degradation may have on other ecological and economic systems that are linked 	[1] The confluence of Mouhoun-Sourou	<ul style="list-style-type: none"> Sono Léry Magnimasso Taré Boron 	<ul style="list-style-type: none"> The area has a particular location (at the confluence of two rivers that are strategic for Burkina Faso), wherein the degradation will have multiple effects on the hydrological system Mouhoun and entire ecosystems that are linked It is now completely overrun by agricultural activity which seriously degrades the riverbanks and threatens their sustainability
<ul style="list-style-type: none"> Specific threats and pressures on the ecosystem (river and forest) 	[2] The « Kari-Ouro-Tisse-Tiogo- Bwo-Kalio » complex	<ul style="list-style-type: none"> Banouba Bisanderou Bekeyou Tissé Dijé Koualio Bwo Tiogo Tiogo Mouhoun 	<ul style="list-style-type: none"> Some of the Classified Forests (CF) are invaded by gold panning (but this is therefore a limitation to its selection as the site of the project intervention) CF constitute a significant proportion of the total municipal area, causing tensions on the actual living space of men and cattle: e.g. in the case of Kalio Some of these CF suffer from agricultural occupation (Bwo and, to a lesser degree, Tiogo) All are subject to uncontrolled bushfires: Tissé, and Tiogo particularly
	[3] Sorobouli and Nosébou Classified Forests	<ul style="list-style-type: none"> Sorobouli Seyou 	
<ul style="list-style-type: none"> Good opportunities for leveraging co-support from related activities 	All of the above listed sites	<ul style="list-style-type: none"> Villages where relevant programs or projects are already taking place, which present the opportunity for co-financing 	<ul style="list-style-type: none"> Major MEDD programs and projects in the 2 regions: Program for the resilience of populations to CC (PRCC / OCADES) bank protection / management of village forests PASF/FIE PIF/REDD+ The GEF CPP sub-program 'Boucle du Mouhoun' UGGF / FNU-GGF (C-O) GEF BD program "Buffer zones" (reforestation and management of protected areas) with co-support from OFINAP and others Micro-dams Multifunctional Platforms⁷⁰ The ability to develop "structuring ideas"

⁷⁰ The multifunctional platform (MFP) consists of a diesel engine and various associated tools: grinding mills, huskers, alternators, battery chargers, pumps, welding stations, and carpentry equipment. It can also be used to distribute water and electricity. This simple machine assists women with long and laborious chores, and allows them time to generate new income streams. UNDP has been supporting for years a major program on MFP in West Africa, Burkina Faso being the most important focus country in terms of scale and perhaps success.

Criteria	Sites selected	Villages concerned	Justification
			from the existing concessionaires with eco-tourism profiles: Kalio (Soltech-Burkina), Sourou/Sa (Express safari du Sourou)

109. These three selected areas and their villages are described in much greater detail in PPG reports (see Annex 8 for links), and are summarized here:

Site [1]: The confluence of Mouhoun-Sourou

110. This area covers the triangle formed by:

- To the west, a dike / road linking the bridge over the Sourou (the Léry bridge) and the spillway dike on the north part of the Mouhoun River;
- In the North, the Sourou river between the dam valves Léry and its confluence with the Mouhoun; and
- In the south all the land on both sides of the "dead arm" of the Mouhoun River resulting from the diversionary dam on this river.

111. The confluence area has no strong link with the Classified Forest (Say) on the left bank of the Sourou River, which has since 2007 had status as a 'hunting concession' managed by a private operator. Located roughly fifteen miles north on the right bank of the Sourou, the village of Sono is a major actor at this site. The residents of Sono indicate that they were driven off of their traditional lands for the construction of the Léry Dam (initially supported by the EU in the 1980s and now being improved with MCC support). There are competing claims to farmland between Sono and Léry villages. There is a good relationship between the communities of Magnimasso and LéryLéry, however this is being tested by rapid population growth in the area leading to more intense competition for access to land and water.

112. Rainfed agriculture is the main livelihood activity at this site. Apart from agriculture, fishing is the secondary activity practiced by farmers. The area does not have non-timber forest products of economic interest. Irrigation to grow onions is practiced, but the onions have poor returns.

Site [2]: The « Kari-Ouro-Tisse-Tiogo-Bwo-Kalio » Complex

113. This site is comprised of six forest reserves: Kari-Ouro-Tissé on the right bank of the river (Mouhoun Region) and Tiogo-Bwo-Kalio on the left shore of the Mouhoun, in the Central-West Region.

114. Right Bank: Kari-Ouro-Tissé: Four riparian forest villages consulted regarding the project are Banouba, Bekeyou, Tissé, and Didje (an enclave in the Tissé reserve). Livelihoods in this area are closely linked to the forest and water resources, as shown in **Table 5**. There is also rainfed agriculture, off-season (*contre-saison*) vegetable cultivation and some livestock.

115. Left Bank: Kalio CF: A distinct case within this complex, the Classified Forest Kalio is demarcated for wildlife conservation and has been operated as a private hunting concession since 2012. The particularity of this Classified Forest is that it occupies more than 50 percent of the territory of the municipal area of the rural commune of Zamo: it extends over the entire north-south length of the

municipality backed by the river, and is limiting free access to waterways previously accessed by the town. In addition, a wildlife corridor has been created since the concession was put in place, which is understood to further limit the access of villagers to the forest. (In the local consultation, residents indicated these measures were undertaken without consultation.) The communities strongly disapprove of the boundaries of this new conservation area, which has restricted their agricultural and pastoral activities. Furthermore, a service road and a park surveillance station were apparently erected, further encroaching on Zamo.

116. In view of the situation at this site, special measures are recommended in the consultation report including establishing better information on the zoning of the areas, determining what remediation measures should be put in place, considering the value of various land uses, etc. This should be conducted in line with internationally established good practice as well as UNDP normal policies.
117. Left Bank: Tiogo and Bwo CFs: Three villages here were consulted as part of the project: Bwo (Zamo commune), Tiogo and Tiogo- Mouhoun (both in Ténado commune). The Tiogo CF's management plan emphasizes production of wood for urban centers Koudougou and Ouagadougou. One of its enclaves (Tiogo-Mouhoun) recently became a village with a school, while around 15 small communities are illegally resident in the classified forest near the city of Kion, in parts of the forest that are hard for the forestry service to access. The area suffers from recurring bushfires and contains a large number of livestock. Miners use sections of the river located in the forest for washing ore, which generates pollution. Water is also drawn from the Tiogo-Mouhoun village to supply the city of Koudougou drinking water pumping station. The Bwo Classified Forest is entirely a "paper reserve" having long been inhabited and showing considerable signs of anthropogenic pressure. Some activities here have even been initiated by different government departments, e.g. agricultural experiment stations.

Site [3]: Sorobouli and Nosébou Classified Forests

118. The Classified Forests of Nosebou and Sorobouli, and the village of Sorobouli, were selected following the regional consultations. By far the main livelihood support is from the (illegal) agricultural use of the Classified Forests areas. Gardening is practiced on the banks of the river, where temporary sumps support irrigation. Many kinds of vegetables that provide extra income are grown here, even banana. Otherwise, there is a little amount of rainfed agriculture, arboriculture and livestock rearing.
119. Selection of these project sites was validated against project objectives at the national validation workshop.

Vulnerability of BdM sites to climate change

120. Livelihoods in this region are closely tied to the river and forest resources, rainfed agriculture, and there are limited other means of support here. The consultation report goes into great detail on the dependence of the villages and their resources to climate change impacts. "H-form" vulnerability assessments were undertaken wherein most participants ranked the risk of drought "extremely severe", noting that the collective memory of the 1973 drought is still vivid. Villagers felt that the impacts of climate changes are felt so severely because livelihoods and production systems are so tightly linked to the availability of rain, and that other livelihood supports are not well-developed enough to provide a viable alternative.

Table 5: Climate vulnerabilities linked to dependence on the river and forests at BdM

Livelihoods linked to the <u>river</u>	Livelihoods linked to the <u>forest</u>	Climate threats	Compounding factors
Sites [1] through [3] in the BdM			
<ul style="list-style-type: none"> ▪ Fish / fishery products ▪ Mussels and oysters collected ▪ Dry season gardening (pumping water from the river) ▪ Meeting water requirements of livestock ▪ Drinking water ▪ Some rare aquatic species 	<ul style="list-style-type: none"> ▪ Farmland and agricultural products (in occupied areas) ▪ Timber ▪ Firewood ▪ Medicinal plants: roots, leaves, bark ▪ Meat and other products from hunting ▪ Pasture / grazing for livestock ▪ Many NTFPs: <ul style="list-style-type: none"> - Fruits, leaves, various almond flowers: shea, nere, tamarind, vines, wild grapes, <i>Balanites aegyptiaca</i>, <i>Detarium microcarpum</i>, cotton wood tree, baobab, <i>A. macrostachya</i>, marula, jujube, etc. - Roots and tubers: wild yam, tuber water - Honey ▪ Harvesting forest seeds (to enrich forest management units) 	<ul style="list-style-type: none"> ▪ Temperature increases ▪ Increasing bushfires ▪ Increase in evapotranspiration and ecosystem imbalances ▪ Increased drought ▪ Affecting tree growth and productivity ▪ Species may be at risk locally if conditions in their current geographic range are no longer suitable ▪ Other disturbances e.g. insect / vector outbreaks 	<ul style="list-style-type: none"> ▪ Abstraction of the river upstream – limited consultation and coordination between Burkina Faso and Ghana combined with uncoordinated policies and development initiatives continue to pose a serious threat to the ability of Burkina Faso to respond to water-related climate changes. Basin issues are only beginning to be tackled through pilot sites⁷¹ ▪ Extension of the areas converted for agriculture for cash crop production (including cotton growing areas). ▪ Pollution of aquatic ecosystems associated with the use of chemicals in agricultural production and hazardous products by mines and miners without any safety standards
Specific to Zamo / Kalio CF within Site [2]			
<ul style="list-style-type: none"> ▪ Fish resources, though currently with limited access ▪ Women formerly collected mussels ▪ Livestock, though likely to have limited access to watering points 	<ul style="list-style-type: none"> ▪ Access to the forest limited by new wildlife corridor (partially impeded at the current stage) 	<p><i>[covered above]</i></p>	<ul style="list-style-type: none"> ▪ Emerging land access conflict with the hunting concession over access to land and resources (described in Section 1.4)

⁷¹ Welling et al (2012). WANI Case Study – Volta River Basin. Available from: [\[Link\]](#) (Accessed November 2013).

1.6.2 Mare d'Oursi Wetlands⁷² Basin

121. A dramatically different landscape to its sister project site, the entire Oursi Basin covers approximately 26,000 sq. km and includes several permanent and seasonal lakes and wetlands. The largest of these are Oursi and Darkoye, in the *Réserve sylvo-pastorale de faune du Sahel*, north of the town of Gorom-Gorom. These lakes, fringed by desert, are important not only locally but globally: Many species of bird migrate across the Sahara twice a year, breeding in Europe and wintering in Africa, usually feed here on their journey. The Lake Oursi-Lake Darkoye Complex is an Important Bird Area (IBA BF002⁷³), while La Mare d'Oursi is a Ramsar site (1BF001⁷⁴). At the time of the site visit, sand martins and swallows could be seen passing through on their autumn migration. The Mare d'Oursi wetlands basin is part of the greater basin of the Niger River, which straddles from Guinea to Nigeria, even though there are no rivers flowing to or from it. The wetlands basin is thought to be located within an endorheic sub-basin of the Niger basin.⁷⁵
122. More than 17,500 people live in and around the Lake Oursi-Lake Darkoye IBA and Ramsar site alone, while some 24,000 people live in the communes within the Basin, around 50 kms from the border with Mali. The area has close historical and contemporary links with Mali, which is still affected by some level of political instability, even though the country has transitioned out a political crisis in 2013 through general elections. (The name Oursi comes from the desire of a Malian migrant to settle in a “clean place”, or “a place without waste”.) There are vegetable gardens around the edge of the lake, which are supported by watering from the lake. Cattle are the dominant livestock, followed by goats, sheep and donkeys. There is also a limited amount of trading and other activities, but none of the participants interviewed during the PPG assessments indicated that they are self-sufficient even in years of good rainfall. Remittances and migrant employment are important income sources to the area.
123. Livestock is the traditional livelihood activity of people living here; it also holds cultural significance. During the field consultations, estimates of cattle numbers considerably exceeded the government figures for the area; Kabore 2013 indicates that this assessment is certainly linked to the value of each species in the popular appreciation and position in society in relation to coping strategies and social practices. Food crises, population pressure and degradation of pasture and water resources, and consecutive droughts have had consequences on livestock. These phenomena have decimated livestock and resulted in significant outflows to other areas of the country or outside. The most memorable were 1973-1974 and 2004-2005, as the events were recalled in all villages. In addition, difficulties in access to agri-based products and animal health services make the development of this sector difficult.
124. A study conducted in ten nearby villages⁷⁶ found that as a result of intense droughts and population growth, competition over natural resources and loss of pastoral grounds to urbanization, pastoralists are practicing less transhumance, reducing herd sizes and taking up crop cultivation. The adoption

⁷² As indicated earlier, the Oursi area – up to the border with Mali - is currently declared a “restricted area”, and travel into these areas especially by foreigners is only permitted with special security measures in place. It is difficult to predict how long this measure will be upheld, but this could pose serious challenge for organizing project interventions. Although locals may be able to move more freely, UNDP staff would need to be accompanied by a security convoy on all site visits.

⁷³ See [\[Link\]](#) in Birdlife's site.

⁷⁴ See [\[Link\]](#) in Ramsar Convention's site.

⁷⁵ In certain endorheic areas in the Sahel, the water table level has been found to be rising over the last several decades despite the strong reduction in rainfall observed after 1968. (Descroix et al. 2013 : Impact of Drought and Land – Use Changes on Surface – Water Quality and Quantity: The Sahelian Paradox. In Bradley (ed.) Current Perspectives in Contaminant Hydrology and Water Resources Sustainability).

⁷⁶ Warner K, van der Geest K, and Kreft S (2012). Pushed to the limit: Evidence of climate change-related loss and damage when people face constraints and limits to adaptation. UNU Institute for Environment and Human Security (IEHS) No. 11. Available from: [\[Link\]](#). (Accessed January 2014.)

of crop cultivation in combination with livestock keeping was expected to diversify the risk that farmers experienced. However, in dry years livestock rely primarily on crops and crop residues for feed in lieu of grazing. Therefore, this livelihood modification does not make households less vulnerable. Instead, it locks them into a fragile system where crop failure, due to drought, results in a cascade of negative impacts. These impacts, including eating fewer meals and the death and sale of livestock, ultimately make households more vulnerable by eroding their capacity to cope with future droughts.

125. The ecosystem is dominated by semi-arid to arid savannah to desert areas. The maximum extent of the wetland is reportedly around 27 km², but during the dry season it contracts significantly (see Figures 10 and 11). Due to the flat topography of the terrain and the soil structure, the recharge of lakes and wetlands depend almost exclusively on rainfall and surface runoff. Prior to the droughts of the 1970s, the rainy season lasted 4-5 months from June to October and remained in the pond water throughout the year. In recent decades, climate changes have resulted in a decrease in the duration of the rainy season (about 3 months, from mid-July to September) and more irregular and less rainfall. In recent years, population growth has led to intense competition for resources and to the proliferation of unsustainable practices. Degradation (including deforestation) caused by human activities has resulted in increased wind erosion contributing to the silting of the pond and the decrease in storage capacity.
126. Given the scarcity of rainfall, the area is vitally important to conservation and development of surrounding communities and nomadic groups, providing food, energy and water to people and animals. The lake is critical for activities such as agriculture (on the banks of the pond as and as the water recedes), livestock (water and pasture area), and fishing. Hay making is a common dry season preparation activity. Communities Ganadaori wish to develop a micro-surface irrigation small scale for “contre-saison” gardening on the left bank of the pond near the village in an area that would be fenced to avoid conflicting uses of water. These functions are actively threatened by over-stocking: in the past there were reportedly around 8,000 heads of cattle drinking at this only open water source in the area per day, while today around 20,000 to 30,000 are recorded daily). In years of low rainfall, only Oursi pond is the main gathering place for herds of the area. Aside the water limitation, a key problem is the trampling impact of the animals. Soils around the lake boundary are eroded and loosened, leading to siltation of the lake. The communities of Tounte and Totori are currently observing the remains of their land being washed away by water erosion. Old sand dunes are mobilized and now encroach on the lake boundaries.



Image 9: The context of Mare d’Oursi, showing dunes on the outskirts of Oursi town, and in the distance is Oursi town, Oursi lake, and hills. Image courtesy C. Hugues (Wikimedia Commons).

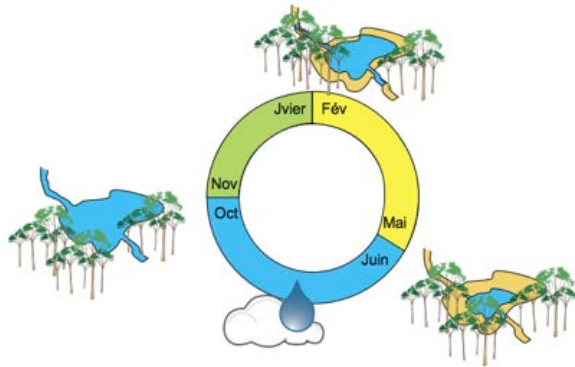


Figure 1: Modèle de fonctionnement d'une mare au Sahel

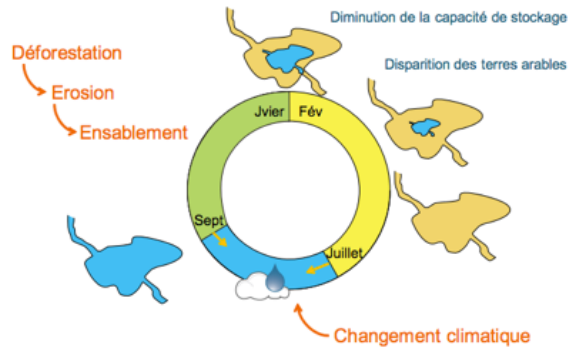


Figure 2: Dysfonctionnement d'une mare au Sahel suite à la désertification

Figures 11 and 12: Model of how Sahelian lakes function, showing the impact of anthropogenic pressures and climate change contributing to drying up of the lakes. From Dofour 2009.



Images 10 and 11: Mare d'Oursi in wet and dry seasons.

Images courtesy Juliane Zeidler (left) and (right) Martin Wegmann (Wikimedia Commons).

127. Various conservation efforts around the lake are already being implemented. Demonstration enclosures are set up, demonstrating how managed grazing pressure can help maintain good vegetation and fodder production. A small tree nursery at the local Forestry office supports the planting of indigenous trees along the lake border. Some interventions have been concluded and are not necessarily continued by the local population.

128. One of the major threats to the Mare d'Oursi comes from extraction of water. A December 2012 study showed that only around 60 percent of inhabitants of the area had reliable access to piped water (via PPG study). Rural water supply in the municipality of Oursi is characterized by: A lack of boreholes; A lack of dynamism of Water Users Associations (Associations des Usagers d'Eau, AEU) in charge of maintenance of hydraulic structures; and The early depletion of groundwater. The pond is therefore significantly relied upon by the city that is fed largely by two large diameter wells in addition to the few wells scattered here and there (for schools, town hall, etc.) putting enormous pressure on the underground water reserves. The water lilies growing seasonally on the lake are considered natural and positive - providing not only food (bulbs), but also presenting a natural evaporation shield.



Image 12, 13, 14 and 15:
 (clockwise from top left)
 Livelihood activities in this area include rainfed agriculture (showing here millet), haymaking in the dry season, livestock rearing year-round (shown grazing), and fishing.
 All images courtesy Juliane Zeidler.



Image 16: Water lilies on Mare d'Oursi.
 Image courtesy Juliane Zeidler

Site [4]: Mare d'Oursi Basin villages

129. The villages selected in this area for project interventions are Djalafanka, Dori, Gonadaouri,

Gorom-Gorom, Kollé, Oursi, Totori Totori, Tounte, and Yomboli. During the PIF development, no specific villages were shortlisted for consideration (as opposed to the BdM area); therefore detailed consultations were necessary to develop both a shortlist and final selection during the PPG phase. The team first conducted stakeholder consultation at the provincial level (Oudalan) and communal level (Oursi and Déou) during the regional workshop to establish a set of criteria. Faced with the difficulty of finding a consensus among these players, the team of national consultants developed a set of criteria based mainly on the operation of the lake as a pond and wetland and the geographical origin of the threats that can influence its future. Furthermore, some lessons learned from existing interventions were factored in. The criteria used and final selections were:

- Location of the village vis-a-vis the watershed of the MdO. Land degradation in the watershed is caused in part by siltation of the lake and its loss of capacity. Three villages are involved here: Oursi, Dialafanka, Totori.
- Location vis-a-vis one of the two ponds adjacent to the MdO (Yomboli or Gounandaouri) and preferably on the course of a river whose treatment significantly influences the supply of the two lakes. Two villages have been identified under these criteria: Yombolo and Gounandaouri, plus additional sites at Tounté and Kollé. The selection of these seven villages was validated at the national validation workshop.

130. Selection of these project sites was validated against project objectives at the national validation workshop.

Vulnerability of these sites to climate change

131. Populations living around the MdO, including the villages selected for project interventions, are severely exposed to the effects of climate variability and change. Their livelihoods can be reduced from one year to another according to the vagaries of rainfall. Production can be « random » given the quality and distribution of the annual rainfall, as well as its consequent effects on land productivity. In these conditions:

132. Terrestrial ecosystems have low productivity; agricultural production does not cover the food needs of populations, and pasture is increasingly insufficient for livestock grazing.

133. The aquatic ecosystem also suffers from the same effects, undergoing much greater rates of evapotranspiration. This results in an early depletion of the groundwater, and an inability to provide humans and animals the water necessary to survive in the area.

134. Human livelihoods are more precarious than ever, and recovery is less and less likely from subsequent shocks. Data collected over the last 12 years shows a pendulum swing in the proportion of food needs covered from year to year – indicating a high level of variability, but with an average that suggests equilibrium.

Table 6: Coverage of food needs in the MdO (Kabore 2013, from Ministry of Agriculture).

Province	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	Moyenne
Oudalan	86%	142%	83%	161%	16%	144%	115%	75%	68%	78%	130%	140%	103,3%

135. Rapid assessments made during the PPG consultations indicate that these crops meet needs for only 1-5 months of the year, even in good rainfall years. Community members in the villages emphasized

that “no unit of production can ensure food cover with its own harvest”. An economic analysis of households in the corresponding area “North transhumant livestock and millet livelihoods area” (referred to as ZOME 8), indicates that 62 percent of the population is classified as poor or very poor.

136. The consequences of recurring food shortages for people and animals associated with water points drying up, as well as increasing pressure on natural ecosystems especially since the major drought of 1973, are manifested in: (i) taking land from adjoining areas of the lake for activities e.g. brick making, (ii) floodplain harvesting (“*fonille de la zone inondable*”) to harvest lilies or wild rice, (iii) flooding, trampling and pollution of the MdO and its surroundings by herds in search of pasture and water, and (iv) mutilation of Acacia shrubs for animal feed.
137. Whether it is good or bad season, agro-sylvo-pastoral ecosystems are extremely sensitive to climate variability, upon they rely to deliver goods and services to local populations. There is a close link between, for example rainfall, pasture quality, filling ponds and migration.
138. For people in the area, and according to the MdO analysis for ZOME 8, selling animals to acquire food represents a significant source of income (up to 92 percent). (See Appendix 12 of Kabore 2013 for a more detailed economic analysis of households in ZOME 8).

Table 7: Livelihoods linked to the wetland and CC threats in MdO

Livelihoods linked to the wetland	Climate threats	Compounding factors
<ul style="list-style-type: none"> • Agriculture (on the banks of the pond as and as the water recedes), livestock (water and pasture area) - Oursi pond is very important area for cattle • Hay making • Fish • Water for livestock • Drinking water • Water lillies (food) 	<ul style="list-style-type: none"> • Temperature increases and exacerbated climatic variability • Increase in evapotranspiration and ecosystem imbalances • Increased drought, with severe negative impacts on crops and 87% reported severe impacts on livestock following recent droughts, particularly those in 2004 and 2010. • Increased frequency in severe weather, including winds. 	<ul style="list-style-type: none"> • Dependence on groundwater • Effect from previous years’ livestock sales • The destruction of crops leads to cascading impacts that affect both livestock and household food security. Low or lost harvests decimate livestock, as livestock depend on crops for feed because they cannot graze. This then directly threatens the income and food security of households that depend on their crops and livestock products to meet food and financial needs.

139. **How do affected people deal with drought?** A recent study of Burkina’s Sahel region⁷⁷ found that the majority of respondents (79 percent) attempted to cope with drought impacts by selling property to pay for food for the household. Most of them (62 percent) reported selling livestock. In the aftermath of drought, livestock is often sold at drastically reduced prices (e.g. one cattle for a single bag of millet), which makes it difficult if not impossible for households to recuperate their losses later. Other households (51 percent) reported receiving food aid from government agencies

⁷⁷ Warner et al UNU

and NGOs, which was often inadequate and difficult to access from rural areas. Some households also resorted to migration (41 percent), whereby young people and heads of households migrate to urban centers to earn a meager income in the informal sector. Some migrate to other countries (e.g. Ivory Coast) to work on cocoa and coffee plantations to sustain their families back home. Despite these attempts to cope with drought impacts, 87 percent of the households had to severely restrict their food consumption. This is a clear sign that existing coping strategies were not enough to address the impact of these droughts.

140. **What is the loss and damage?**⁷⁸ While the sale of livestock to cope with drought provides short-term relief and enables households to buy food, it ultimately erodes their coping capacity in the long-term. As droughts continue to occur regularly and with increased intensity, households become more vulnerable and less able to cope as their limited livestock are continually depleted and not replenished. In addition, the migration of young people and heads of households to work in factories and on plantations carries social costs by separating families and weakening social networks. Last, but not least, the depletion of herds to cope with drought impacts constitutes a severe loss of cultural identity and lifestyle, as illustrated in the boxes below. Most people in the area are Fulani, for whom pastoralism is much more than just a source of food and income: it is a way of life. When a Fulani family loses its herd, it is felt as a disgrace.

⁷⁸ Ibid.

2 Project Strategy

2.1 Additional Cost Reasoning of the Proposed Project

141. Although a number of initiatives have been taken by the Government of Burkina Faso and its development partners towards climate change adaptation, they focus primarily on the national level and are insufficient to build the necessary social and natural assets for on-the-ground resilience. Furthermore, while many livelihood-building activities are taking place at local level, these activities are so far not using information about climate change to be able to plan for adaptation. The project objective is to reduce local communities' vulnerability to the additional risks posed by climate change and build their resilience with focus on the natural resource management sectors in two important locations in Burkina Faso - the Boucle du Mouhoun Forest Corridor and the Mare d'Oursi Wetlands Basin.
142. The project requests the LDCF to finance the additional costs of enhancing the resilience of communities in these two areas critically important to Burkina Faso. The two regions are strategic because of the availability of water resources in a water-scarce country, but equally because a large portion of the rural population in Burkina Faso depends on ecosystems for their livelihoods. Therefore, methods and lessons on how to manage both natural and social assets with due consideration for climate change risks can be shared with other regions, and project outputs adapted elsewhere.
143. Under the project's baseline, a range of activities relating to the management of water, forests, pasture, fire and land, would be undertaken, coupled with activities that strengthen livelihoods. Those would have positive impacts on the management of natural and social assets, including through relevant interventions in the BdM Forest Corridor and the MdO Wetlands Basin. They provide a solid baseline upon which the proposed LDCF investment will take place. However, despite the fact that these baseline measures aim to address sustainable development and climate change impacts to some extent, they do not significantly include measures to increase rural communities' adaptive capacity and resilience, or to reduce long-term vulnerability to climate change.
144. The proposed initiative will therefore facilitate climate change mainstreaming into development and spatial planning at the local level. The project recognizes that measures to adapt to climate change must first and foremost be undertaken at the local level. In this light, the project takes the communities living in the BdM and MdO areas as a key entry point and the most important drivers of change. It will contribute towards informing and implementing local and pragmatic adaptation responses through innovative demonstration activities.
145. In order to overcome the identified barriers (in Section 1.3) the project will:
- Increase knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system (Outcome 1)
 - Strengthen the climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO, by focusing on vulnerable natural and social assets in target project sites (Outcome 2)
 - Integrate climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin into key sectoral planning and investment

frameworks with focus on local and regional levels (Outcome 3)

146. Capacity building through awareness-raising, training on climate change, their impacts and possible adaptation options, and close assistance to impulse climate resilient management at the community level are necessary. Taking due account of local knowledge, customs, and risk reduction strategies, the project will promote climate resilient ecosystem management practices and technologies (e.g. water management and improvement of soil fertility, pasture and rangeland management), combined with resilient income generating activities in selected project sites. These measures will be implemented through a close collaboration with local authorities and technical partners such as local civil society organizations. These technical partners will be key vehicles to test and validate adaptation options, as well as to disseminate best practices widely.
147. Lessons learned and best practices from the implementation of demonstration adaptation activities and resilient income generating activities will be codified and disseminated for potential replication (with appropriate adjustments) in other areas.
148. Existing institutional and policy frameworks and key sectoral planning and investment frameworks have only partially taken climate change considerations into account. There have been several efforts in this respect and commendable progress was made in the past few years, including though adaptation specific interventions that address the climate agenda in the development of national capacities at institutional and systemic levels. In particular, significant efforts have been committed by the Government of Burkina Faso to implementing NAPA priorities (i.e. the more urgent adaptation measures with focus on productive sectors). Currently Burkina Faso is moving on to the next step in NAPA implementation, with a focus on medium- to longer-term, and a multi-sectoral approach to adaptation. It is only these past few years, where findings of updated climate research became accessible to national decision makers. The EBA experience that will emanate from this project will make a crucial contribution to informing the debate. Yet, on-the-ground interventions from Component 2 would definitely lack a more decisive policy and investment support to become sustainable. The project will address this by focusing on the mainstreaming of climate change considerations into local and regional development planning and finance, also as a means to influence national policies.
149. Finally, the project will enable the government to build Burkina Faso's overall capacity to face climatic challenges through demonstration of practical solutions, development of systems and tools to support this, and by instigating the internalization of climate change risks into key sectoral policies that pertain to ecosystem management. More specifically on the ground, the project will address climate-driven vulnerabilities in the planning and implementation of local development programs, projects and initiatives so as to reverse the loss and degradation of essential natural resources that are essential to people's livelihoods as a measure to adapt to climate change.
150. All baseline projects described in Section 1.4 are linked to the three components of the project. The relevance of baseline projects to each component is detailed in Section 2.4. The project is designed to build on the core baseline projects and specific co-financing (see Section 2.4).

2.2 Project Rationale and Policy Conformity

151. The Government of Burkina Faso became a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and is classified among the non-Annex I parties. Burkina developed and submitted their National Adaptation Program of Action (NAPA) in 2007 and is entitled to benefit from the LDCF for the implementation of NAPA priority measures. In implementing priority interventions identified in the NAPAs, the project is consistent with the

Conference of Parties (COP9) and also satisfies criteria outlined in the UNFCCC Decision 7/CP.7 and GEF/C.28/18. It also responds to Decision 1/CP.16, which invites Parties to enhance action on adaptation by “building resilience of socio-ecological systems, including through economic diversification and sustainable management of natural resources”. The project has been endorsed by both the national UNFCCC and GEF focal points.

152. The project responds to urgent and immediate adaptation priorities and actions identified in the Burkina Faso NAPA.⁷⁹ This proposal addresses 7 of the 12 priorities identified in the NAPA - noting that the other priorities are being addressed through other projects. This project is specifically aligned with and supportive of the NAPA’s three objectives: i) increased knowledge and understanding of climate variability and change-induced risks at the country level and in targeted vulnerable areas, ii) strengthened adaptive capacity to reduce risks to climate-induced economic losses, and iii) successful demonstration, deployment, and transfer of relevant adaptation technologies.
153. Burkina Faso has also defined national actions and policies oriented to creating a basis for sustainable development. The project strategy and proposed outputs are consistent with national development priorities, and have close substantive and institutional links and complementarities with the primary national development strategies and plans⁸⁰ including:
- The SCADD and ‘2025 Vision’, both of which stress importance of climate risk to sustainable development and economic growth, and emphasize the links with natural resource management and ecosystem services.
 - The Rural Development Strategy (RDS), where the objective is to ensure sustainable development of the rural sector in view to contributing to the fight against poverty, by consolidating food security, access to water and promoting sustainable development.
 - The National Policy for the Environment (2007), which stresses the sound management of natural resources and their contribution to the country’s economic development.
 - The Forestry Code (1997, currently being updated), which emphasizes the importance of managing forest resources rationally.
 - The National Water Policy (2007) and the Action Plan for Integrated Water Resource Management (PAGIRE), which covers two phases, the current one being 2009-2015, and which seeks to increase access to water and sanitation through IWRM, while placing the management of scarce water resources high on the national agenda with a long-term and integrated view. Both the Water Policy and its Action Plan stress the importance of wetlands, especially those of international importance (Ramsar sites) and of river basins in the country’s economic development.
 - Burkina Faso’s National Biodiversity Strategy and Action Plan (NBSAP 1999), which stresses that the country’s biodiversity endowment is limited and it needs therefore to be managed in a sustainable manner. The NBSAP is undergoing a review to align it with the global Aichi Targets, including the mainstreaming of climate change into the management of biodiversity.
154. These largely sectoral development plans, policies and reports constitute baseline development strategies which have only superficially taken on-board stresses on natural and social assets that will likely be created by climate change. Overall the project will enable Burkina Faso to continue building its capacity to face climatic challenges.

2.2.1 LDCF conformity

155. This project is fully consistent with the two goals of LDCF Strategic Objectives in the following manner. It responds to the Focal Area Objective CCA2 (Increasing Adaptive Capacity: Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national,

⁷⁹ Available from the UNFCCC website [\[Link\]](#).

⁸⁰ Refer to Chapter [1.1.4](#) for more detail on policies and strategies.

regional and global level), [CCA2-Outcome 2.1](#) (Increased knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas). This is aligned with project [Component 1](#), as it focuses on expanding the knowledge and understanding among relevant groups of stakeholders on specific climate risks affecting the NAPA-prioritized project sites. More specifically, the project will develop and apply a comprehensive agro-ecological and hydrological system of information, planning and decision-making on the management of natural and social assets under scenarios of climate change. Through training and other measures the sustainability of the system will be secured. The project also responds to the [Focal Area Objective CCA1](#) (Reducing Vulnerability: Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level) by aligning the intervention to two Focal Area Outcomes. Through Component 2, the project activities are aligned to CCA1-Outcome 1.2 'Reduced vulnerability to climate change in development sectors'. More specifically, it will focus on 'natural resource management' as a 'development sector' and will address specific vulnerabilities to climate change embedded in the management of natural and social assets. Finally, the project is aligned to CCA1-Outcome 1.1 'Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas'. It does so by seeking to improve, through Component 3, landscape-level governance in targeted landscapes in a manner that addresses the additional impacts of climate change in the ability of agro-ecological and hydrological systems to provide services and sustain livelihoods. The cost-effectiveness of proposed measures will be monitored and lessons drawn.

156. The proposed project has been prepared fully in line with guidance provided by GEF and the LDCF/SCCF Trust Fund. The project follows specific guidance from the 'Programming Paper for Funding the Implementation of NAPA's under the LDC Trust Fund' (GEF/LDCF 2006). The project focus is also aligned with the scope of expected interventions as articulated in the LDCF programming paper and decision 5/CP.9. As climate impacts fall disproportionately on the poor, the project recognizes the links between adaptation and poverty reduction (GEF/C.28/18, 1(b), 29).

2.2.2 GEF conformity

157. The project has been designed to meet overall GEF requirements in terms of design and implementation. For example:
158. **National ownership:** As above, Burkina Faso approved and submitted its NAPA in 2007. This proposal addresses 7 of the 12 priorities identified in the NAPA (see chapter [2.3.2](#)). The NAPA was prepared through a comprehensive participatory process, with the full involvement of relevant stakeholders. Accordingly, this project is country-driven and the project's concept is consistent with, and supportive of, national development strategies such as the draft Strategy for Rapid Growth and Sustainable Development, 2011 – 2015 (SRGSD), and the Rural Development Strategy (2003) among others;
159. **Compliance with LDC Fund policies:** The proposed project constitutes a response to urgent and immediate adaptation needs (program conformity). It is designed to address the additional costs of priority adaptation measures identified in the NAPA (program design), and it will also create the necessary capacity to sustain impacts after project completion (sustainability). The ratio of LDCF funds to co-financing is consistent with LDCF norms. Notably, the project emphasizes (i) investments at community level to ensure benefits to poor and marginalized communities, and (ii) gender empowerment, through the mainstreaming of gender concerns across all activities;
160. **Financing:** Cost-effectiveness criteria were applied in the choice of adaptation measures and modalities during the NAPA process. During the PPG process, alternative approaches will be considered and the most cost-effective approach determined. During implementation, coordination

with related activities will ensure synergies and cost-efficiencies. Finally, the level of co-financing ensures financial cost-effectiveness;

161. **Institutional synergies and support:** The project is to be linked with other concurring projects, programs and initiatives, including one ongoing project financed by LDCF. It complements rather than duplicates these other related development efforts. The project will be implemented by the National Council for Environment and Sustainable Development (CONEDD), under the Ministry for Environment and Sustainable Development. CONEDD, with support from UNDP, will play a pivotal role in project support and ensuring the coordination and synergies with other projects, programs and initiatives, and it will provide necessary institutional support; and
162. **Monitoring and evaluation:** The projects will follow the GEF monitoring and evaluation procedures in addition to UNDP guidance on M&E for adaptation projects. Adaptive management will be a key component on the management approach. Details for monitoring and evaluation will be articulated during the project development phase. In order to better address gender issues, where possible, indicators will be gender disaggregated. Gender marking will apply (refer to Sections 3.1 for further details on this).

2.3 Country Ownership: Drivenness and Eligibility

2.3.1 Country drivenness

163. Burkina Faso is a Least Developed Country (LDC), Party to the UNFCCC (since 1992), and it has completed its NAPA in November 2007. The proposed EBA project covers 7 of 12 priority projects identified in the Burkina NAPA (detailed in the next chapter [2.3.2](#)). The project - building closely from the NAPA which was itself developed through an extensive participatory process, both the project' concept (i.e. its [Project Information Form](#) or PIF) and this PRODOC were prepared through a highly participatory process, in line with UNDP's and GEF's requirements. During the project preparation stage, numerous meetings were held with stakeholders in order to assess their interests in the project and define their roles and responsibilities in project implementation (see the Stakeholder Analysis in Section I, Part I for a description of the primary stakeholders and their expected participation in / collaboration with the project). Project design benefited from field visits and consultations carried out during the preparation phase, including: a national stakeholder workshop (12 September 2013); regional stakeholder workshops: at Gorom-Gorom for MdO (9 October 2013) and Dédougou for BdM (11 October 2013); as well as a validation workshop in January 2014. Furthermore, five thematic feasibility studies were carried out (see Annex 8) by a team of national consultants, who were tasked with identifying and taking into account other relevant local, national or regional studies and projects.
164. The project is also fully aligned with the UNDAF outcome #1 "Accelerated, sustainable and pro-poor economic growth", which address adaptation to climate change specified in the National Strategy on Climate Change as a matter of priority. It responds directly to UNDAF Output 1.4: "National and grassroots structures practice an integrated approach sustainable management of natural resources and take into account the effects of changes climate through adaptation and mitigation".
165. Furthermore, the project directly addresses priorities in the Second National Communication (SNC) for Burkina Faso (2008) prepared for the UNFCCC CoP and developed with the support of the Ministry on the Environment and Sustainable development (MEDD). Key areas of vulnerability in Burkina identified in the SNC include water resources, agriculture and forestry. The project will build local community adaptation capacities as well as strengthens commune-level and decentralized

government services to be able and address adaptation in a well informed and knowledgeable way. The systemic capacity to address adaptation in Burkina will be strengthened through targeted interventions at the policy, planning and budgeting levels.

166. Burkina Faso has also developed a unique NAPA coordination unit under the supervision of the Executing Agency for the EBA project, SP-CONEDD. The UNDP has served as the implementing agency for three existing NAPA projects through its Country Office presence and support from a specialized GEF Regional Coordination Unit. With UNDP's support, the Burkina government has delivered these projects in a timely manner. SP-CONEDD has also signed a partnership agreement combining key institutions to support the National Framework for Climate Change research initiatives. Partnership members include the General Directorate for Meteorology (DGM), the National Research Institution for Environment and Agriculture and the University of Ouagadougou. Together, these ministries have been represented by an ad-hoc working group for climate change. The group has jointly conducted climate change research, namely, climate trend studies, climate scenarios, vulnerability assessments and evaluations of adaptation costs using tools for mid and long-term adaptation planning. The tools which the group has utilized include R-Climdex for climate trends; the ENSEMBLE approach for climate scenarios; and the CROP WAT, Ricardian and T21 models for climate vulnerability and adaptation (V&A) assessments. Advantages of the working group partnership include; 1) climate data sharing and mainstreaming for research and planning, 2) open-access use of sophisticated climate analysis tools for the national institutions involved in the collaboration. This is particularly relevant to Component 1 of this proposed EBA project.

2.3.2 Country eligibility

167. In 1992 Burkina Faso signed and ratified the Rio Declaration on Environment and Development. The development and adoption of a series of strategies, action plans and programs has occurred pursuant to the Rio Declaration, notably:

- The National Action Program to Combat Desertification (PAN / LCD), the first strategy framework developed and implemented in Burkina Faso, under the International Convention on the fight against Desertification (UNCCD), was signed and ratified in December 1995;
- The National Strategy and Action Plan on Biological Diversity was developed in 1999 and adopted by the Government in early 2001;
- The first national communication under the United Nations Framework Convention on Climate Change (UNFCCC), submitted by Burkina Faso in November 2001 was finalized in April 2006.

168. Burkina Faso ratified the Kyoto Protocol on 16 November 2001. It became effective in February 2002. Consequently, Burkina Faso developed its NAPA, which was published in November 2007 in accordance with the requirements outlined in the UNFCCC COP 7. The preparation of the NAPA was a participatory exercise to identify and prioritise adaptation measures. Priority actions in the NAPA were developed on the basis of available evidence on past and current changes and adaptations to climate variability, as well as via the results of regional workshops and thematic assessments developed by a group of multidisciplinary experts. A three-step prioritisation process was undertaken, including participative scoring and ranking of priorities. The NAPA identified the functionality of forests and critical wetlands as a vulnerable, as well as the agriculture, water and livestock sectors. The NAPA also identified the most vulnerable groups to be the poor in rural areas, notably the women, young people and small-scale producers.

169. This proposed project responds directly and comprehensively to those urgent needs identified and expressed in the NAPA. More specifically, the project is aligned with NAPA priorities, first of all in terms of 'sectors' – i.e. the project addresses (i) terrestrial ecosystems; (ii) water resources; and (iii) food security sectors, which feature high among the 12 priority actions of the NAPA. Secondly,

through demonstration activities on the ground under Component 2, the project addresses in different ways the following priority actions foreseen in the NAPA (noting that priorities 1 and 2 have been addressed through a previous LCDF project):

- **#3** on Restoration and management of the Mare d'Oursi (output 2.2)
- **#4** on Fodder production and development of fodder stocks for livestock in the Sahelian Region of Burkina Faso (outputs 2.1, 2.4 and 2.5)
- **#5** on Rehabilitation, sustainable management of natural vegetation, and “*valorization*” (or valuing) of Non-timber Forest Products in the Eastern region of Burkina Faso, though the focus of the present project is on Boucle du Mouhoun region (outputs 2.2 and 2.3)
- **#6** on Control of sand encroachment/mud silting in the river basins of Mouhoun, Nakanbé and Comoé (outputs 2.1 and 2.2)
- **#8** on Protection of pastoral-suited regions in the Sahelian and Eastern regions (outputs 2.4 in the BdM, but also 2.1, though the focus of the latter is on the MdO in the North)
- **#10** on Promoting community-based fauna management in the Mouhoun region (output 2.5 and 2.6)
- **#11** Implementation of safety zones and backup devices to control pollution of underground and surface water catchment infrastructures (lakes, wells, boreholes) in the cotton belts of Burkina (Mouhoun, South-West, Comoé and the Eastern part of Nakanbé) (outputs 2.2).

170. In this manner, the project is very well aligned with the NAPA and a direct response to the adaptation priorities contained in it.

2.4 Design Principles and Strategic Considerations

2.4.1. Design principles

171. The adopted approach to project design is Ecosystem-based Adaptation (EBA) - simply, using nature (biodiversity and ecosystem services) to help adapt to climate change by strengthening, safeguarding and building both ‘natural’ and ‘social’ assets, including the interplay between them. EBA approaches can encompass protection, restoration and sustainable management of these assets, both on-the-ground and via upstream policy transformation. CBD Decision X/33 proposes a definition of EBA that includes the “sustainable management, conservation and restoration of ecosystems, as part of an overall adaptation strategy that takes into account the multiple social, economic and cultural co-benefits for local communities”. Following this line, the project design builds from the body of knowledge and lessons on EBA.⁸¹

172. Key design principles for the project are therefore:

- Promotes multi-sectoral approaches.
- Operates at multiple geographical scales.
- Integrates flexible management structures that enable adaptive management.
- Minimizes trade-offs and maximizes synergies with development and conservation goals to avoid unintended negative social and environmental impacts.
- Incorporates best available science and local knowledge, and fosters knowledge generation and diffusion.

⁸¹ See Travers *in press*; UNEP et al 2012; also, Andrade et al 2011 (full references in Section 8)

- Promotes resilient ecosystems and nature- based solutions to provide benefits to people, especially the most vulnerable.
- Is participatory, transparent, accountable, and culturally appropriate, while actively embracing equity and gender issues.

173. The basic project design incorporates several projects developed through the NAPA, and adds value by bringing them together where lessons, processes, etc. can be shared. The project design is in line with the PIF, but refined through the studies and consultations undertaken during the PPG phase, as follows:

Considerations in the Design of each Component

Component 1

174. One of the PPG studies (Traore 2013) was fully dedicated to verifying activities in this component, including observations on capacity and needs. The National Observatory for Environment and Sustainable Development (ONEDD) is the environmental information portal currently functional, but under continued construction at www.onedd-burkina.info. The study noted that its main objective is to collect and process environmental information available in the country to promote and disseminate indicators, data and metadata. It has the specific objectives, *inter alia*, to:

- Monitor and evaluate activities related to the implementation of the three Rio Conventions;
- Monitor relevant indicators of pressure, state, impact and response related to the environment and sustainable development;
- Act as an interface between the indicators of the Observatory and those of the national sustainable land management monitoring and evaluation system; and
- Communicate indicators and results with regular updating dashboards and their dissemination in the form of reports and information available on a web portal.

175. The establishment of a system of geo-climatic information, agro-ecological and hydrological only focused on the BdM and MdO region (as proposed in the PIF for output 1.1), can therefore be designed in perfect symbiosis with the ONEDD system being developed. The proposed ‘SICOFORMO’ (acronym for *SIG corridor forestier et mare d’Oursi*; i.e. GIS for the BdM and MdO sites) is proposed as a sub-component of the ONEDD, which is already (partly) operational. However the success of such an approach lies in anticipating and taking measures regarding the:

- Diligent, smooth and regular transmission of local data to the central system for the development of indicators and meta-data;
- The dynamism of the network of information to support the implementation of the information system collection;
- The maintenance and enhancement of the results of information in decision-making and local planning system;
- Potential constraints in resources and / or availability of qualified staff when needed to perform the work required for the extraction and formatting of data, especially when it comes to mobilizing a large number of operators, as is the case for information to back up the database, through decentralized services;
- The need for dynamically updating some basic data such as on land use through mutual feedback between the ONEDD system and its sub-component SICOFORMO;
- The need for institutional liaison to based locally for ensuring ‘ownership’ of development outcomes and the fostering of national and local capacity.

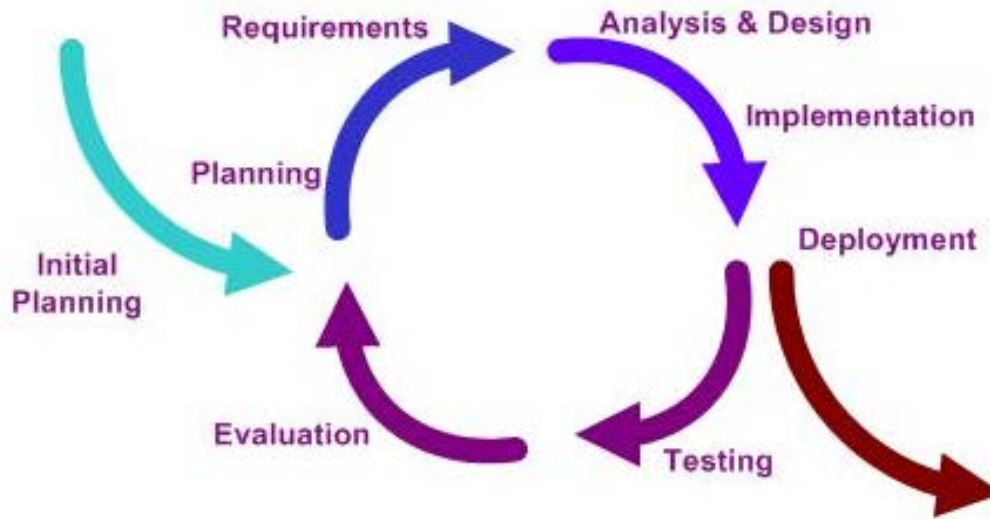
176. The project design must take into account these considerations and on this basis proposes a triangular system management and data storage system between Ouagadougou, Dédougou, and Dori. Ouagadougou would be the main data center or national node of the information system, the other two being secondary data centers. Both the main data center and the secondary centers have each have their own system of data collection, which is harmonized across the different levels. Overall, data are collected at the secondary data centers, sent to the central node in Ouagadougou,

where it is processed, indicators are calculated, dashboards are prepared, validated and products are then placed on the Internet for wide availability. The choice of Dori and Dédougou is due to the fact that these two cities they are well-linked to the Internet and easily accessible by road. Furthermore, these two centers are already participating in the Network for improved environmental information management (RIDEB).

177. Finally, the IT capacity building and monitoring division of SP/CONEDD (DCIME) acquired in 2012 a high performance server connected to a dedicated line that serves processing, storage and dissemination of environmental and climate data. Finally it is the SP/CONEDD that accommodates the receiving station for satellite images. All these are advantages for the SP/CONEDD to host and manage such an information system. A number of specialized staff work at DCIME including a forest manager specialized in geomatics, a geographer specializing in geomatics, a surveyor specializing in IT and GIS, a computer manager and a librarian. The management of ONEDD are instrumental in the preparation of the annual State of the Environment report, as well as the coordination of the national program for the management of information on the environment (PNGIM), the management station receiving satellite images, and the implementation of a national environmental monitoring device (DNSE). Therefore, providing support for additional projects and programs present a major challenge on staff availability that the project must take into account in its design.
178. The range of proposed functions for the SICOFORMO require considerable levels of knowledge and technical expertise, which relevant actors at regional level will not necessarily have in sufficient quantities. For this reason SICOFORMO will work within existing structures and initiatives, and leveraging the capabilities already established at the national level (ONEDD), but also expanding them in an organic fashion. To address the need for technical services, outsourcing many aspects of this component to service providers in the private sector is recommended. These services include training, aspects of information management (crashes, conversions, upgrades, maintenance, analysis, etc.), as well as services related to the Internet. The project design proposes a component manager to be situated in ONNED's Division for the Development of Competencies, Information and Environmental Monitoring (DCIME), in order to closely manage the development of the system in the first 18 months.

Component 2

179. As the component with by far the largest budget allocation, and the closest links to the local level, a total of four PPG 'feasibility studies' emphasized this component, in order to verify assumptions made at the PIF stage and refine proposed activities. Much more detailed considerations on project design are found in these reports (Hien 2013; Kam 2013; Kabore 2013 and Kamsié 2013 – see Annex 8).



Source: Wikimedia Commons

Figure 13: Schematic representation of an iterative and incremental development model

180. Considering the novelty of the EBA approach in Burkina Faso, as well as uncertainties, the field-based activities in this project, the implementation should follow an ‘iterative and incremental development’ approach (see **Figure 13**). This would involve quickly implementing small demonstration projects, working via partners and with the appropriate authorities and local communities, after the project inception. These projects would not only provide some early tangible results but would also generate experimental data based on an adaptive management approach to determine how the ecosystem responds to measures. Collecting data on a smaller scale provides feedback, helps confine any problems that might develop to a manageable scale, and helps increase the probability of successful restoration for further project development. Such projects would yield valuable data that could be used to develop more substantial projects. They could also engage local people in the projects immediately, and derive benefits that give the project some early momentum. As appropriate, scale up the efforts from around 18-24 months into the project.
181. Output 2.1 as introduced in this document is meant to address the need for locally appropriate adaptation planning and project implementation. The PPG studies uncovered a long list of needs and priorities. However, given the need for activities to be sustainable, replicable, innovative and additional, project design at each location needed to: (i) be strategic; (ii) involve a priority setting process with communities; and (iii) demonstrate an appropriate level of attention to participation (particularly of women) and demand-drivenness. PPG studies provided the basis for this, but mostly in terms of the ‘initial planning’ foreseen in **Figure 13**. Output 2.1 will ensure that all of this is given due attention through a feedback mechanism in the course of implementation.
182. Demonstration activities in the two project areas have been the subject of feasibility analysis based on two sources: (i) the proposals developed during the project identification and (ii) the coping strategies discussed with local communities during consultations. As per Output 2.1, these will be subject to development of community-based adaptation plans and carried out via the mentioned iterative and incremental development approach to implementation.
183. Local adaptation planning will utilize good practices in participation and use a ‘gender-transformative’ approach. The inequitable distribution of rights, resources and access to social goods – as well as some cultural rules and norms – result in highly asymmetrical relationships of power between men and women. This constrains the ability of many women to take action on

climate change. However, poor and marginalized men often contend with similar constraints vis-à-vis other relationships of power. Therefore, adaptation approaches pioneered by NGOs such as Conservation International and CARE includes ‘empowering’ both women and men to challenge and change deeply rooted inequalities. These efforts are characterized as ‘gender-transformative activities’, which strive to examine, question and change rigid gender norms and imbalances in power relationships in order to increase people’s resilience. Gender transformative activities encourage critical awareness among men and women of gender roles and norms; promote the position of women; challenge the distribution of resources and allocation of duties between men and women; and/or address power relationships between women and others in the community, such as service providers or traditional leaders.⁸²

Component 3

184. Here, former output 3.2 in the PIF⁸³ was downgraded into an activity under Output 3.1, in order to reflect expressed priorities.

2.5 Project Objective, Outcomes and Outputs/Activities

185. This Section includes a list and description of project components as well as additional cost description that demonstrates what would be done in a development baseline in the absence of climate change and the alternative scenario including measures that meet urgent and immediate needs that justifies the request for LDCF resources.

Project Objective

186. The **project objective** is to reduce local communities’ vulnerability to the additional risks posed by climate change and build their resilience with focus on the natural resource management sectors in the Boucle du Mouhoun Forest Corridor and the Mare d’Oursi Wetlands Basin.

187. In order to achieve this objective, and based on the project’s barrier analysis—which identified: (i) the problem being addressed by the project; (ii) its root causes; and (iii) the barriers that need to be overcome to actually address the problem (see [Section 1.3](#) and Annex 1)—the project’s intervention has been organized in three components.

Component 1

Knowledge support platform on climate change impacts and risks

Outcome 1: Increased knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system

Baseline Component 1, Without LDCF Intervention

188. Existing efforts to expand the knowledge and understanding of climate variability and change-induced risks at country level include the following programs, projects and interventions: PRD/SP-

⁸² Aguilar L. (2009). Training Manual on Gender and Climate Change, IUCN, UNDP and GGCA, Gland, Switzerland. CARE (2010). Adaptation, gender and women’s empowerment. CARE International Climate Change Brief. Available from: [Link](#) (Accessed November 2013.)

⁸³ Former output 3.2 read as follows in the PIF: “The climate resilient polyculture model is incorporated into relevant forestry, agricultural and livestock management strategies, plans and investments for the BdM Forest Corridor and the MdO Wetlands Basin.”

CONEDD, AMESD, PAGIRE and CORDEX, as well as the UNDP regional initiative on the Sahel. These initiatives can potentially contribute significantly to fine-scale climate modeling for project sites. This will be useful. However, the actual analysis of the impact of climate variables under different scenarios on natural and social assets would still need to be carried out. The above-listed baseline interventions have a direct bearing on the knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas. Their contribution is significant and the impact will likely be felt in many years to come, given that these programs are dealing with issues of capacity at systemic and institutional levels. SP-CONEDD has been greatly reinforced by the PRD financed by the Austrian Cooperation (as well as other initiatives). The UNDP collaborates with SP-CONEDD and other national agencies in Burkina Faso on data and knowledge management, but the scope is still limited. As for AMESD, which also has a regional scope, it may be said that only some of the program's activities have benefitted development planners and practitioners in Burkina Faso. Although AMSED has no specific climate change information focus, potential for an expanded collaboration in its new phase exists. The same applies to DGRE with respect to the water resource information system under PAGIRE, through which expanded collaboration will be sought. As for CORDEX, in collaboration with Climate Data Analysis Group, regional downscaling was conducted and results are available for 9 locations in Burkina Faso. Altogether, the mentioned programs, projects and initiatives constitute a solid baseline for the proposed Component 1 of the project. However, ONEDD itself does not currently have specific details on climate change impacts at the two sites, and available information is not available fine enough resolution to contribute to the adaptation of the BdM and MdO sites.

189. There are intrinsic limits in scope, timeframe and funding in all of listed baseline interventions, with respect to the barriers identified under this Component. This makes them insufficient in terms of developing a robust information and analysis system that combines timely climate risk and vulnerability information, with information related to the management of natural and social assets. Hence, in the baseline scenario, additional data, information and the capacity for analyzing them, which could be brought to bear to address climatic vulnerability at the local level, will remain scattered and managed by few individuals in different institutions. These individuals and institutions are not necessarily collaborating on data exchange and coordination for adaptation. Existing climate modeling and analysis will not be adequately consolidated with landscape, resources and land use features as well as socio-economic data. Capacity to do so will also remain incipient under the business as usual scenario.
190. The estimated amount of 'the baseline project' for Component 1 represents \$13.1 million.

Adaptation Alternative Component 1, With LDCF Intervention

191. In the alternative scenario enabled by the GEF managed LDCF funding, systems will be in place to disseminate timely climate and risk and risk management information for practical management applications. Regional technical staff will be trained not only in information generation, but especially information packaging and dissemination for application by key stakeholders, including at demonstration sites within the project zones.
192. As a result, they will count on increased knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system. More specifically, the project will help establish an adaptive system for managing evolving risks and uncertainty linked to climate change, which is specifically tailor-made for the project zones.
193. Special emphasis is placed on developing demand-led information, packed in a way that end-users can apply it in relevant decision-making contexts. This is a critical additionality to the baseline,

which will lead to increased adaptive capacities and reduction of climate risk vulnerabilities especially in the two project zones. Through up-scaling efforts, extending learning opportunities beyond the two project zones/regions the approach will be furthered to achieve national coverage.

Component 1:	
Baseline:	\$ 13.1 million
Co-financing:	\$ 1,299,000
LDCF grant requested:	\$ 1,034,000

Output 1.1

A geo-based climatic, agro-ecological and hydrological information system ('SICOFORMO'), hosted by SP/CONNED and focusing initially on the BdM Forest Corridor and the MdO Wetlands Basin, is operational by end of project year 1 and it enables the analysis of climate-driven vulnerabilities and the cost-effective planning of specific adaptation interventions in Component 2 for strengthening social and natural assets

194. The 'SICOFORMO' information system (*SIG corridor forestier et mare d'Oursi* i.e. GIS for the BdM and MdO sites) will include information on: (i) natural assets available (water, forests, wetlands) and ancillary information on their use; (ii) identification of critical areas for agro-ecological and hydrological services and their role in livelihoods; (iii) special features such as bushfire incidence, economic activities, population aggregations; and (iv) an overlay with the likely climate change impacts under different modeling scenarios, pointing out to areas of climate risk and vulnerability for communities and essential natural assets, upon which livelihoods depend. The key purpose is to enable the analysis of climate-driven vulnerabilities and the cost-effective planning of specific adaptation interventions in Component 2 for strengthening social and natural assets.
195. Information will be presented by the system in different ways:
- Dashboards indicators of monitoring and surveillance;
 - Indicators for monitoring and evaluation system;
 - Databases developed by SICOFORMO from data provided by the network partners;
 - Basics of spatial data developed from thematic maps related to natural assets (water, forests, wetlands) and additional information on their use;
 - Information on metadata indicators subsystem of the Observatory;
 - Identification of critical areas for agro-ecological and hydrological services and their role in livelihoods;
 - The impact of bushfires, economic activities, population clusters;
 - Overlap with the likely effects of climate change under different scenarios modeling, highlighting areas of climate risk and vulnerability of communities and key natural assets, whose livelihoods depend.
196. The SICOFORMO will disaggregate the information firstly to the two local centers (Dori and Dédougou) to ensure the return of validated information to the regional level and enable regional centers to play their role. Local or regional centers should disseminate information in a secondary circuit to regional "clients" and local: decentralized technical services, local authorities, NGOs and associations, private users and operators. In addition to these dissemination mechanisms, the core in Ouagadougou will use the means of dissemination of key information, whether the dissemination of data to specialized players or synthetic analyses to policy makers or the general public.
197. SP-CONNED will be responsible for hosting, although their capacity for developing the system managing the system will need to be developed and harnessed throughout the project. This applies in particular to the analytical capacity, as some of the key products from the system will be analytical

(i.e. more than just maps). The sustainability of maintaining and possibly expanding the system to cover other parts of the country will be ensured through its design in conjunction with the operational ONEDD system, and using the RIDEB network nodes.

Activities:

- 1.1.1. **Strengthen capacity of DCIME** to refine established information system (i.e. ONEDD) and improve information inputs; this will entail human resource support e.g. through the secondment of a project team member, as well as office support. Technically this will include the review and validation of current sets of indicators and data sources, collaboration protocols, and the development of TORs/tender documentation for the SICOFORMO system. A suitable service provider will be recruited. Trial data collection, final preparation of indicators and proposals for the integration into ONEDD will be part of such a consultancy.
- 1.1.2. **Position DCIME to coordinate existing and newly emerging information systems** supported by various cooperation partners and sectors (including ensuring compatibility with other management systems such as SNIEAU (DANIDA-supported national water information system). This will entail that DCIME convenes a start-up workshop with relevant stakeholders and partners on a national level to identify all relevant initiatives that should be coordinated, and agree with relevant institutions on mandates of data collection and processing, including with the Meteorological Services. Regular coordination meetings will be held to and institutionalized at DCIME. The project will facilitate relevant regional (Dori and Dedougou) coordination mechanisms – which DCIME may inform or coordinate; final arrangements remain to be determined.
- 1.1.3. **Set up local resource tracking systems** to increase knowledge and understanding of climate variability and change-induced risks in the project targeted areas related to a customized geo-based agro-ecological and hydrological information system. The database for the SICOFORMO system (i.e. the ONEDD database) would need to be strengthened, and the project would need to provide catalytic support for data collection in the two project zones. The establishment of hydrological weirs and strategically located rain gauges and possibly automated weather stations is foreseen.⁸⁴ Where possible local level rapid information needs assessments (called for under Component 2) will be designed to support such data collection. On a site specific demonstration basis relevant climate and natural resource tracking systems will be designed and implemented. *It is critical that such information be utilized directly for decision-making purposes and not be lost into a large information system that shows no specific application context on the local and regional level.*
- 1.1.4. **Update risk and vulnerability assessments for the BdM Forest Corridor and MdO Wetlands Basin.** Initial information generated during the PPG phase should be furthered and more formally conducted as a risk and vulnerability assessment. A consultancy will be tendered out to provide such services, optimally integrated into the work of DCIME and other relevant project partners. A team of national and international experts will conduct such work. The main focus of the assessments should be determined based on decision-making needs stemming from the two very different project intervention areas in BdM and MdO, and should be conducted in an EBA context. As the assessment should have a clear application focus, this work is linked to Component 3.

Output 1.2

Approx. 30 national and provincial planners, plus 60 local commune leaders and 30 staff from NGOs/CSOs are trained on the use and interpretation of analyses from the ‘SICOFORMO’ system with the aim of using them for climate-adaptive development planning and implementation

198. The selected members of the project team will be involved in training beneficiaries of the analyses from the SICOFORMO system, resorting to external facilitation and workshop organization when needed. The aim is to capacitate them in using the system for climate-adaptive development

⁸⁴ Information on the location of weirs, gauges and weather stations is available in the EW Project document

planning and implementation, but also to receive direct user feedback on the usefulness of the system and its products, so it can be improved. It is proposed that some 20 national and provincial planners, plus 60 local commune leaders and 30 staff from NGOs will be trained. Also, in order to enhance the replication aspect of the project, managers and leaders from baseline initiatives dealing with land, forests and water will also be invited to benefit from the training.

199. Both the SICOFORMO system and the associated training proposed under Component 1 are additional to the current baseline project because they will address a specific need for compiling and consolidating information for enabling an adequate planning, monitoring and evaluation of concrete, on-the-ground adaptation measures to be implemented in the two project zones. Such a system currently does not exist and establishing it would go beyond the current capacity embedded in baseline interventions. Without LDCF, achieving the goal of increasing the knowledge and understanding of climate variability and change-induced risks in the project targeted areas would not be possible

Activities:

- 1.2.1. Develop and implement capacity development plan with regional (Ouagadougou, Dori and Dédougou) and local level (BdM and MdO)** for decentralized application and operationalization of information system. Based on an initial capacity needs assessment a demand-led and practical capacity development plan will be implemented. Trainings, as well as practical systems for data updating will be provided. Where necessary equipment support will be granted. The technical trainings will be geared not only towards use of the information system, but rather in the application of the knowledge products to practical planning and decision-making problems related to climate resilience in BdM and MdO. Emphasis will be placed on sharing practical applications with a suite of regional and local level decision-makers to build policy relevant capacities (linked to Component 3).
- 1.2.2. Undertake stakeholder information needs assessment and scope relevant designs of knowledge products** to be generated from the geo-based agro-ecological and hydrological information system so that they will be actively used by regional planners, local commune leaders and local resource managers for NRM planning and budgeting and for guiding the sighting and planning of adaptation activities in Component 2; complement knowledge products with relevant guidance and lessons learnt stemming from the demonstration projects in Component 2. It is understood that a considerable effort must be invested into the proper design on knowledge products to ensure that they will in fact be useful and be applied. The fact that Burkina Faso has a very high illiteracy rate must be factored into the design of any such a system. *Gender considerations in this regard will also be important.*
- 1.2.3. Develop relevant knowledge products and application support**, including through relevant trainings and outreach activities. Investments into knowledge product development and dissemination, as well as tracking of their usefulness will be very important for the project. This is also reflected in the resource allocation for this activity. Project liaison staff will be working with beneficiaries to identify, evaluate, select and apply potentially new ways of disseminating information (e.g. 'green cards', interactive maps, mobile phone alerts / applications, and other more innovative products), as well as use of more traditional channels such as through radio will be explored.
- 1.2.4. Track application and success of knowledge products.** Partially linked to Components 2 and 3, it is important to this project to monitor and measure the impact of the knowledge products developed and disseminated, as well as the effectiveness of training delivered. As this project invests, from a geographical point of view, into a 'pilot' approach that could potentially be up-scaled to other regions, it is important to invest into adaptation learning – of which this impact monitoring is a part. Relevant sharing of experiences with representatives from other regions will take place e.g. through national workshops and presentations.

Component 2

Vulnerability reduction and strengthening of resilience demonstrated in the management of natural and social assets in the BdM forest corridor (BdM) and the MdO wetlands basin

Outcome 2: The climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO are strengthened by focusing on vulnerable natural and social assets in target project sites

Baseline Component 2, Without LDCF Intervention

200. At the level of project sites, the issues of livelihoods and natural resource management are being addressed by a number of relevant programs, projects and interventions:

- **UNDP/UNCDF ACRIC** in strengthening livelihoods in a number of different sites, in particular throughout the Boucle du Mouhoun region. Through one of the project's component opportunities are being created for poor people in the region by supporting both small businesses and increasing access to microfinance. Another component focuses on social sectors (health, education infrastructure), but also institutional support at the decentralized level. The project is making important capital investments in production through micro-credit support. Although 'sustainable development' is at the heart of the program, a closer analysis of its design indicates that the project is not explicitly addressing climate change, nor does it take climate stressors into consideration through the planned and implemented activities in the Boucle du Mouhoun Region.
- **UNDP PTMF** is playing a pivotal role in the strengthening local livelihoods both in localities in the BdM Forest Corridor and in the MdO Wetlands Basin. The mastery of techniques that, although simple, can be transformational in the local context builds a very strong baseline upon which additional climate-driven stressors can be addressed. The focus on women and their economic empowerment is crucial for the sustainability of the program and for addressing gender developmental issues. It does so by creating surpluses – of energy, water and ultimately free-time. It adds value to local products, e.g. by producing oils with a reasonably high market value from local seeds. Giving people the power to steer their own development through the PTMF's approach underpins the concept of decentralization and increased village-level autonomy that has been shaping the country's policies towards livelihoods since the early 1990s. For these and other reasons, the PTMF is hailed as a major success in Burkina Faso. Although the expansion of livelihoods options and the creation of surplus can often be construed as an adaptation measure, the UNDP PTMF program is not directly addressing other adaptation needs at the local level. The program is, for example, contributing to making additional water available in villages, but the diesel engine that is fitted on the platform does not substitute other, sturdier engines that are needed for constantly supplying water to the entire village. Also, with sudden drops in the water table, it is possible that specific platform units may lose its water pumping function. In other words, the PTMF is not climate proofed.
- **Other UNDP programs:** Among those mentioned in the baseline description, the one on decent employment, the sub-national ones focusing governance, as well as the wider scope programs on disaster risk reduction, are contributing in different ways to livelihoods and resilience in Burkina Faso.
- **PNGT** is making a significant contribution to landscape level governance, both due the amounts being invested throughout the country for tackling pervasive rural development issues, but also because the long-term and phased approach. In the same manner as the PTMF, fostering economic activities and creating surplus is a major development lever at the local level. The Program makes a strong contribution to the baseline. However, as explained, climatic challenges are not being addressed through the PNGT2 and it is not clear the extent to which they will be in PNGT3.
- **AfDB-PLCE** is tackling the issue of siltation and dune fixation through a regional approach. The protocols that the project has developed involving communities in the fight against dune erosion and siltation of essential water courses are extremely useful and have been tested at project sites in the MdO Basin (e.g. in the Oudalan Commune, Oursi Province). Climate change effects are expected to exacerbate siltation and dune movement. The project has not addressed the additional climate stressors.
- **OFINAP and APFLN** are very active in the project zones. Both the BdM and the MdO harbor important protected areas, for which the responsibility is shared between the General Directorate for Nature Conservation (DGCN) and OFINAP. More specifically, OFINAP is managing the Deux Balés

National Park (80,638 ha with the buffer zone), located in the southern end of the BdM Forest Corridor, while DGCN manages (or oversees the management of) various gazetted forests within the Corridor (reaching at least 174,115 ha). DGCN also manages the large estate of the *Réserve sylvo-pastorale du Sabel* (1.6 million ha), which overlaps the MdO Basin. With respect to the management of natural assets in the project zones, both the conservation of biological diversity and the sustainable use of natural resources are of utmost importance for the reduction of vulnerability to climate change. These issues, alongside with landscape-level governance and management of ecosystem services, are at the core of the mandates of both OFINAP, APFLN—and also of DGCN. The respective programs of work of these three institutions include activities relating to protected area management planning, active surveillance for the protection of biological assets, fire management and enforcement against poaching. However, they are not decisively addressing additional climatic challenges that the forests in the BdM and the wetlands in the MdO are bound to face in the medium and long-term.

- **PRD/SP-CONEDD** includes the Regional Development Program for the Boucle du Mouhoun (PRD/BMH), under which plans were outlined for engineered works in the Mouhoun and Sourou Basin aimed at protecting the riverbanks. Proposals combine both infrastructural reinforcements made of concrete for the most critical zones, but also gabions and solutions involving the use of surrounding vegetation—though these cannot outright be branded as ‘ecosystem-based’ techniques. These works are being currently rolled out and they are particularly relevant for Output 2.2. Complementarity of approaches with this project will be sought. However, it is questionable whether climate change considerations are part of the equations for scoping the works. Hence, it can be said that climate change adaptation is not yet mainstreamed into the infrastructural solutions of basin management in the BdM.
- **PAGIRE** is making significant progress in implementing action on the ground on IWRM in both the Mouhoun Basin as in the Mare d’Oursi Basin. A Master Plan for the Mouhoun Basin has been prepared by the Program for Harnessing Water Resources in Western Region (VREO). It includes actions on riverbank protection in close collaboration with the PRD/BMH. Actions are also under implementation for protecting fragile aquatic ecosystems, including in the Oursi Basin and Sourou Valley.
- **NGO driven livelihood programs** have an essential role to play in “translating” the challenges of climate change to local communities and in assisting them in overcoming these challenges through behavioral approaches (e.g. awareness and alternative livelihoods). Several NGOs would like to embrace climate change into their programs of work, many of them with a gender angle. Some NGOs are in fact actively developing and implementing adaptation programs—e.g. OCADES in the BdM, ZEPESA and NATURAMA in the MdO. Although the scope is limited, their activities are highly relevant for this project’s baseline.
- **FIP/REDD+ Burkina Faso-AfDB** is currently planning specific investments in the BdM region with respect to forests. As any in REDD+ program, there will be a focus on reducing the loss of forest biomass as potential carbon reservoirs, with the expected associated co-benefits of maintaining, but not necessarily restoring forests. There is scope for collaborating in the realm of Outputs 2.2, 2.3 and 2.5.
- **Other relevant programs** could also be cited as being part of the baseline under Component 2. They deal with agriculture, food security, livestock management, disaster response, among other issues. There are significant investments in these topics and sectors in the project zone and the list would be extensive. Although undoubtedly important, their contribution to the baseline project was not necessarily estimated in financial terms and their specific description not included. This would have required very extensive research, which – UNDP assessed – would yield only marginal benefits to project design and implementation. The presentation of baseline interventions under this Component is therefore restricted to the programs, projects and initiatives that are more directly relevant to the proposed activities and which could be more easily engaged as stakeholders.

201. In sum, business-as-usual development efforts are generally addressing problems in the project zones (BdM and MdO), but not fully taking into account the pervasive effects of climate change. In the baseline response, climate driven and climate exacerbated vulnerabilities linked both to natural assets (water, pasture, forests) and to social assets (livelihoods and land use systems), are therefore not being sufficiently addressed. Among baseline projects and programs, too little effort is being put into developing the capacity of program beneficiaries to adapt to climate change, neither through practical experiences, nor through policy mainstreaming. In addition, among baseline interventions that have, at least to some extent, adopted adaptation as part of their programs, experiences are too few to provide evidence on the effectiveness—and cost effectiveness—of the different techniques

for managing vulnerable assets, on the one hand, and of the comparability of different adaptation approaches (e.g. infrastructural, behavioral and ecosystem-based), on the other. Livelihoods in the project zones are therefore vulnerable to climate change. Considering that land use systems bear a certain degree of maladaptation (referring to the current tendencies towards the gradual degradation of ecosystems systems that is not climate-driven), the maintenance of the *status quo* will likely increase communities' vulnerability. At best, it will not be able to sufficiently reduce the level of vulnerability. This scenario needs to change.

202. The estimated amount of 'the baseline project' for Component 2 represents \$49.3 million.

Adaptation Alternative Component 2, With LDCF Intervention

203. In the alternative scenario enabled by the GEF managed LDCF funding, the climatic vulnerability of key agro-ecological and hydrological systems (i.e. ecosystems) will be reduced and their resilience strengthened by adaptation measures in the Boucle du Mouhoun Forest Corridor (BdM) and the Oursi Wetlands Basin (MdO). The aim is to demonstrate adaptation options in these two landscapes, which at risk from the effects of climate change.

204. More specifically, the project will introduce, through actions on the ground, a suite of EBA techniques that will systematically help communities to adapt to climate change. These will include the climate-sensitive management of wetlands, the establishment of riverine swales, the construction of check-dams, adaptive fire management, polyculture, among others. The project will work towards demonstrating those as viable and cost-effective adaptation options. Currently they have a clear additional character vis-a-vis existing and planned interventions, which are not adequately dealing with climatic vulnerabilities in the project zones. The key goal is to infuse resilience in the management of water, pasture, forests, livelihoods and land use systems. The different techniques are proposed within two groups of demonstration activities: the first group (under outputs 2.2 through 2.5) aims at strengthening *natural* assets against the additional risks posed by climate change; the second group (under output 2.6), *social* assets. Both groups of activities will be supported by enabling actions (under output 2.1), i.e. focusing on planning, engaging stakeholders and delivering training. However, it should be recognized that, while strengthening *natural* assets by facilitating the uptake of improved technologies, techniques and approaches by the communities, their *social* assets will be concomitantly strengthened. The inverse is also true. By strengthening social assets (e.g. improved income and nutrition derived from polyculture and related techniques), people would become less likely to over-exploit and degrade ecosystem resources that compose their natural assets.

205. Finally, the focus is on strengthening capacities to address climate related risks at the local level. By applying a bottom-up approach to identifying climate risks, local farmers and natural resource managers will be put into the driver's seat to plan adaptation options and carry them through. The planned EBA activities will be linked to livelihood priorities, which were already partially identified during consultations carried out during the PPG phase (see below). By developing local level adaptation plans, locally tailored interventions will be implemented in the two project zones, responsive to local needs. Local level adaptation capacities will be systematically strengthened and co-supported by both project staff and by technical and financial partners.

Proposed activities at project sites and priority setting

206. During the project identification and PPG phase consultations, a long list of activities proposed by communities themselves has been identified. A list of those that were considered by the PPG team as additional vis-à-vis the baseline, and that are conducive to resilience building and climate change adaptation, was thereafter compiled. These are presented in Annex 3 for each of the sites, alongside

with some considerations. PPG consultants have also further developed the ideas emanating from communes and developed more specific and practical proposals, some of which were costed in PPG studies. In an iterative exercise of refining, prioritizing and selecting, the matrix below includes a summary of proposed activities for the two project zones. This is further explained in the actual description of activities under outputs 2.2 through 2.6.

BdM
<ul style="list-style-type: none"> ✓ Recovery of degraded lands in Classified Forests (so as to improve the resilience of forests as a drawing card for the future) ✓ Protection of riverbanks, including the management of ravines (with due consideration for hydrological and climatic factors) ✓ Promotion of agroforestry and tree farming (for securing future income streams and other co-benefits) ✓ Optimized use of floodplain areas e.g. for short cycle crops (as another means to strengthen food security), but with due consideration for the concomitant need to protect riverbanks in critical locations. ✓ The development of multi-purpose gardens (using improved and climate adaptive agronomic techniques and seeds) ✓ Beekeeping, but with assistance for the management of colonies and the marketing of the product (for developing more sustainable and alternative income sources of households) ✓ The prevention and management of bushfires (with due consideration for climatic variability and possible impacts of climate change on forest ecosystems and its natural fire regime) ✓ The establishment of carefully planned livestock access corridors to watering points and seasonal migration routes (so as to minimize the negative impact environmental of livestock at the landscape level and maximize the positive, as well as the social benefits of orderly livestock keeping) ✓ Supporting the development of profitable NTFP transformation businesses for rural women, preferably replicating tested cooperative models, on the basis of sustainable harvests and with good prospects for marketing the goods (as a means to strengthen women's social assets and generally improve the household's resilience).
MdO
<ul style="list-style-type: none"> ✓ The recovery of degraded lands ✓ Dune fixation ✓ The development of climate adaptive production sites, i.e. by developing 'exclosures'⁸⁵ and experimental areas for fodder production (e.g. forage banks) ✓ Protection of the banks of the main ponds (Oursi, Darkoye and others) ✓ The establishment or expansion of <i>boullis</i>⁸⁶ (i.e. small ponds) in "peripheral" areas. ✓ The rehabilitation and construction of new water points for human consumption ✓ Enriching a portion of the pond with climate resilient vegetation, through e.g. supplementary water, oxygen or organic matter – depending on the locally identified problem and area ⁸⁷ ✓ Support for the development of an equitable plan for climate-resilient use of pastoral resources and water ✓ Support for productive activities of women (e.g. multi-purpose gardening)

⁸⁵ An enclosure is fenced off area to support the regeneration of grazing vegetation

⁸⁶ A "boull" is a word used in the local language to describe an artificial pond. Building *boullis* within a watershed and combining this with the plantation of infiltration inducing species of trees and grass around the pond extends the rainwater storage capacity at the landscape level. It also allows the local ecosystem to be rehabilitated by protecting the soil and increasing the biomass availability. Through gradual infiltration the boull also improves the availability of ground water and avoid sudden drops of the water table during periods of drought.

⁸⁷ E.g. by seeding or planting stems of herbaceous species. The *bourgon* plant (*Echinochloa stagnina*) is a good candidate, as it not only increases the direct availability of forage to livestock, but it also enhances the productivity of existing pasture.

Component 2:	
Baseline: estimated at	\$49.3 million
Co-financing:	\$ 20,167,782
LDCF grant requested:	\$ 5,260,335

Output 2.1

Effective demonstration site level participatory governance and project implementation structures are established, local adaptation plans are implemented, and local commune leaders and resource users are trained in climate adaptive and anticipatory management of natural and social assets

207. This output is proposed on the basis of findings and proposals from the PPG studies (see Annex 8). In order for the initially proposed interventions to be strategically applied, developed on the basis of individual community needs, have the greatest possible impact and be most promising for replication, individual adaptation plans at local level are called for. Furthermore, for successful community interaction, in particularly considering the gender dimensions of adaptation measures, a comprehensive presence by the project must be established in the two pilot areas. Monitoring and evaluation should be comprehensive and actively applied to enable scaling up interventions from these villages.

Activities

2.1.1. Set up appropriate project implementation arrangements, with clear presence at BdM and MdO pilot sites. This will include the establishment and operationalization of appropriate local level participatory platforms for project execution, specifically considering gender dimensions. As a principle for community interaction a “farmers’ school” approach to demonstrations will be applied, actively involving and putting into the drivers’ seat local communities and making them work together with regional extension personnel from various sectoral ministries

2.1.2. Together with local communities develop local adaptation plans that are responsive to local needs and dominant climate risks, with the below key interventions areas identified during initial consultations (outputs 2.2. to 2.6). Local adaptation plans are a key tool to managing climate risks and will help local communities in **taking** charge of their own adaptation planning in the future, beyond the project timeline.

Local adaptation planning:

- Is based on a comprehensive, participatory and gender-sensitive analysis of vulnerability to climate change (including the social, economic and political determinants of vulnerability);
- Recognizes differential vulnerability within countries, communities and households; and it targets adaptation strategies accordingly;
- Builds on the existing knowledge and capacities of men, women, boys and girls;
- Aims to empower vulnerable women and girls to build their adaptive capacity;
- Is planned and implemented with the participation of both women and men, including the most vulnerable groups in the community;
- Promotes adaptation policies and programs at local, national and international levels that meet the specific needs of poor women and men;
- Supports men and women to access the resources, rights and opportunities they need to adapt to their changing environment; and
- Promotes gender equality as a long-term goal⁸⁸.

2.1.3. Local commune leaders and resource users (e.g. farmers, freshwater fishermen and -women, livestock herders, foresters, rural women's groups and others) are trained in climate adaptive and anticipatory

⁸⁸ See CARE 2010 (as before).

management of natural and social assets to support implementation of the remainder Outputs in Component 2 and with focus on the diversity of services rendered by sustainable agro-ecological and hydrological systems and their role in local livelihoods. The development and later application of relevant knowledge products foreseen under Component 1 will be informed by local level user needs stemming from Component 2 activities.

- 2.1.4. **Set up tracking systems that monitor effectiveness of adaptation measures** (EBA and other), using, amongst other AMAT (i.e. the LDCAF/SCCF Adaptation Monitoring and Assessment Tool). Set-up and implement participatory tracking system of successes and failures and use for adaptive learning.

Output 2.2

Critical wetland areas, covering some 1,600 ha and of ephemeral rivers and lakes in the Mdo Wetlands Basin, and which support 24,000 livelihoods, become more resilient to desiccation through improved management of water usage and soil (e.g. deforestation, trampling by livestock), and the replanting and protection of indigenous grasses and herbaceous vegetation resilient to significant climatic variance

208. Measures will promote infiltration, decrease soil transpiration and make more palatable grasses and water available to livestock during the dry season. Environmental parameters such as water table depth, infiltration and sedimentation rates, soil temperature and transpiration will be closely monitored. Great care will also be applied in the choice of plants that will be used in re-vegetation. The project will evaluate the cost-effectiveness of the proposed wetlands restoration measures and monitor their sustainability during the project's lifetime and beyond. Comparing trends in key parameters in both managed and unmanaged sites vis-a-vis climatic variables should be able to provide evidence on effectiveness and sustainability of the proposed action as an adaptation measure. However, reaching evidence-based conclusions on this may take several years and only possible after the life-time of the project.

Activities (in Mdo):

- 2.2.1. **Improve management of water usage and soil erosion** (e.g. deforestation, trampling by livestock) through developing, in a participatory manner, local level management plans and arrangements.
- 2.2.2. **Pilot interventions that improve soil erosion and water related ecosystem services** through:
- The replanting and protection of indigenous grasses and herbaceous vegetation resilient to significant climatic variance;
 - Measures that promote infiltration, decrease soil transpiration and make more palatable and ecologically adapted grasses and water available to livestock during the dry season (e.g. by seeding *Andropogon gayanus*, known as "cram-cram", and *Echinochloa stagnina*, known as "bongou", which are not only fodder to livestock, but has other uses that women tend to exploit);
 - Stabilizing dune systems that have become mobile – due to the trampling impacts of livestock ancient stable dune systems have been loosed in recent years, leading to an accelerated encroachment of such dunes on the lake and adjacent settlements in recent years;
 - Protection and sustainable use of wetland associated resources such as fish and wild birds, through better management, monitoring and control, maintaining such important natural assets, supplemented through polyculture approaches (see output 2.6);
 - Help address **critical** water shortages observed in all communities situated in the Mdo basin (linked to Component 3); best available hydro-(geo-)logical information will be applied to the sighting of possible boreholes and their development; relevant water management plans will

be developed by the local communities in view of maintain the long-term sustainability of the water resource esp. in a climate change context.

Output 2.3

Flood and erosion control is ensured through a “surgical” and climate anticipatory approach in the BdM, by establishing flood tolerant and erosion resistant grassed and herbaceous swales

209. A grassed and herbaceous swale is a graded and engineered landscape feature (varying 200m to 1km in width) and appearing a shallow open-channel drainageway stabilized with grass or other herbaceous vegetation. Swales in project sites will be vegetated with flood tolerant, erosion resistant plants. Besides controlling flood and storm water, and improving the base flow in the immediate area of an adjacent water body (e.g. a stream or a river), a swale can also act as a filter medium removing pollutants, building check dams at critical points of the BdM Forest Corridor with community participation and enriching riparian forests with multi-use, climate resilient tree and herbaceous species -- this will contribute to the effective protection of riverbanks (as a complement to other proposed infrastructural solutions upriver), decrease soil transpiration and topsoil loss, it will allow the conveyance of storm water at a slower, controlled rate, reducing siltation levels in the water course and significantly improving infiltration and percolation. Swales can also provide other agro-ecological and hydrological benefits to riverine communities facing an increasingly variable climate.

210. In the BdM Forest Corridor, the project will work together with local communities and PRD/BMH to identify key areas where the protection of riverbanks can be best carried out using the above described swales and check dams. This will be coupled with measures to enrich riparian forests. Great care and professional advice will be applied in the selection of species for reforestation. Preference will be given to multi-use, climate resilient tree and herbaceous species. These small works in the immediate floodplain will be combined with reforestation measures in the upland areas of the riverbanks. Restored and expanded gallery forests will act as co-adjuvants in improving infiltration and percolation rates around the riverine areas where swales and check dams are engineered. The desired effect is the maintenance of the base flow in the water course, counteracting both the effects of storm surges, which may be driven by changes in the rainfall regime, and of water scarcity, which may be driven by drought. Both are expected effects of climate change in Burkina Faso. An added benefit of proposed measures in this output, is also the reduction in siltation levels in the water course, besides other agro-ecological and hydrological benefits. The availability of useful trees and the improved availability of water are hugely important for riverine communities facing an increasingly variable climate.

Activities (in BdM):

2.3.1. Pilot interventions that improve soil erosion and water related ecosystem services through:

- Establishment of flood tolerant and erosion resistant grassed and herbaceous swales covering primarily barren areas within e.g. the first 20m strip along the riverbanks. This will be complemented by the enriching and expansion of riparian forests with multi-use, climate resilient tree and herbaceous species. Here ‘riparian forests’ are not just the immediate gallery forest along the riverbanks, but the term applies to any area within the catchment area where woody vegetation plays or can potentially a role in the protection of river the bank and in the improved management of the water cycle within it.

- Improved livestock movement plans and water regimes e.g. through creating specific corridors and water access at managed water points reduce pressure along the river sites from trampling.
- Conduct a climate risk assessment component that specifically assesses the impacts of upriver water uses on climate resilience and water related ecosystem services (linked to 1.1.4).

Output 2.4

Gazetted forests in the BdM are protected against climate-induced bushfire

211. This output includes (i) protocols developed for managing climate-driven risks of increased incidence and intensity of bushfires in the BdM Forest Corridor; and (ii) around 150 km of demo firebreaks are built by the project around some 73,000 ha of forests. The combination of different techniques in the BdM Forest Corridor, including climate adaptive bushfire control, the protection of riverbanks and the enrichment of forests, meets the principle of additionality. They address additional climate stressors on the river and forests in the project zone. These stressors include decreased quality and availability of water, sudden drops in the water table, atypical flooding due to storm surge and climate-exacerbated river bank erosion. Addressing these climatic stressors is not being currently done through baseline interventions. Reduce specific climatic vulnerability relating to water, forests and people's livelihoods. It will gradually work to strengthen resilience in both the natural and social assets that are concerned.

Activities (in BdM):

2.4.1 Pilot interventions that improve protection against climate induced bushfire in the gazetted forests in the BdM through

- Establishing protocols developed for managing climate-driven risks of increased incidence and intensity of bushfires in the BdM Forest Corridor;
- Building 150kms of demo firebreaks with support by the project around some 73,000 ha of forests, using a cost-effective and sustainable method with the involvement of riparian communities.

Output 2.5

Through locally decided and enforced by-laws, an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin, aimed at avoiding overstocking during the dry season, is implemented with the support from sedentary communities and transhumant groups

212. Coupled with wetlands restoration measures, the project will facilitate the preparation of an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin. Without such plan, measures to restore wetlands and their functionality for people's livelihoods in the face of climate change would have little or no effect. The plan will aim to avoid overgrazing and overstocking during the dry season by regulating access to water and pasture resources. Yet, the plan would not be enforceable, if it is not collectively agreed upon with local sedentary communities and transhumant groups. The project will competitively select and engage a capable national CSO to work with local communities and transhumant groups in the MdO Wetlands Basin. The CSO's role will be to facilitate the preparation and negotiation of the plan, until it becomes a by-law agreed upon by concerned resource users.

213. Both the wetlands restoration measures and the implementation of the climate resilient plan to

avoid overstocking in the MdO Wetlands Basin will provide a more predictable supply of water to livestock and crops in the face of climate change – being therefore additional measures with respect to the baseline situation. Grazing areas will also be expanded. By protecting and regenerating native vegetation, increasing the mean water volume in the wetlands and controlling overgrazing, the project will, through activities under this output as well as Output 2.2, make more water and pasture available. This will reduce the vulnerability of local livelihoods and increase their resilience in the face of climate change. These measures will thereby address climate driven and climate exacerbated issues in the management of natural and social assets at project sites.

Activities (in MdO):

2.5.1. Pilot interventions that address pressures onto the MdO ecosystem through uncontrolled transhumance through

- Development of management approaches to transhumance pressures (esp. on grazing and water, but also other natural assets such as wood, fish, birds) through agreed access control plans and rules and their application
- Sub-national and regional approaches to better managing transhumance needs are used to supplement or enhance relevant local measures (see e.g. Component 3 regarding possible additional water sources).
- Through locally decided and enforced by-laws, an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin, aimed at avoiding overstocking during the dry season, is implemented with the support from sedentary communities and transhumant groups.

Output 2.6

Polyculture and adaptive agro-ecological production systems in communal lands (at least 400 ha)

214. In both project zones (BdM and MdO), the project will demonstrate the value of polyculture and adaptive agro-ecological production systems for local people's livelihoods. The on-going UNDP--GEF LDCF project *Strengthening Adaptation Capacities and Reducing the Vulnerability to Climate Change in Burkina Faso* focuses on the agro-sylvo-pastoral sector. Several lessons are being learned about the feasibility and cost-effectiveness of community-based adaptation measures in different parts of the country, including some on polyculture and its suitability to different agro-climatic settings. Polyculture involves the mixing of food crops with trees, but may also encapsulate production systems involving crop rotation, multi-cropping, intercropping, use of beneficial weeds, and alley cropping. Polyculture can be easily combined with animal rearing, offering farmers an additional source of protein. This may in turn reduce the pressure on hunting resources. One of the main advantages of polyculture (vis-a-vis monoculture) is the marked decrease in plant disease susceptibility, reducing therefore the use of pesticides. Biological pest control is also an option to be explored. The use of leguminous trees are known e.g. to increase nitrogen fixation in the soil. The technique will be applied. Coupled with other techniques, such as no-till farming⁸⁹, mulching and sheet mulching, polyculture may significantly reduce the need for artificial fertilizers. The technique

⁸⁹ From Wikipedia entry 'No-till farming': "No-till farming (also called zero tillage or direct drilling) is a way of growing crops or pasture from year to year without disturbing the soil through tillage. No-till is an agricultural technique that increases the amount of water that infiltrates into the soil and increases organic matter retention and cycling of nutrients in the soil. In many agricultural regions it can eliminate soil erosion. It increases the amount and variety of life in and on the soil, including disease-causing organisms and disease suppression organisms. The most powerful benefit of no-tillage is improvement in soil biological fertility, making soils more resilient. Farm operations are made much more efficient, particularly improved time of sowing and better trafficability of farm operations." (Accessed on 28 Jan 2014)

will be designed to demonstrate how income sources can be diversified in the specific agro-ecological conditions at project sites. The focus will be on producing not just food, but also fuel-wood, fiber and other goods more sustainably for local consumption and sale. These measures, together with other co-adjutant techniques that can be part of the polyculture ‘technique package’ (such as improved granaries, recycling of post-harvest biomass waste etc.), are expected to reduce local communities’ vulnerabilities to climate change through a livelihoods approach. This is not yet being tried by baseline interventions concerned with agriculture, forestry and land degradation. To the extent that climate change is expected to greatly reduce livelihoods’ options, the application of polyculture, even on a demonstration scale, is therefore additional.

215. Furthermore, the project will build on lessons from the first ‘NAPA follow-up project’ for Burkina Faso (i.e. the one mentioned further up with focus on the agro-sylvo-pastoral sector).⁹⁰

Activities (in BdM and MdO):

2.6.1. Pilot interventions in BdM that address social assets and reduce climate risk vulnerability in local communities through

- Polyculture and adaptive agro-ecological production systems in communal lands (at least 400 ha) are demonstrated at project sites (e.g. building on the lessons from first NAPA follow up project for Burkina Faso and the information gathered through PPG studies) as a means to strengthen vulnerable livelihoods and cope with additional climate risks by diversifying income sources and producing food, fuel-wood, fiber and other goods more sustainably for local consumption.
- Specifically understand incentive systems around resources governance e.g. to address issues around charcoal production and other unsustainable uses of timber and non-timber products from the forest reserves
- Identify other priority intervention areas based on local level consultations and development of local level adaptation plans.
- Various activities on agro-forestry will count on the support from the National Agency for the Promotion of Non-Timber Forest Products (APFNL). More specifically, they will: (i) support women's groups in identifying their micro-initiatives and do market research on their behalf; (ii) train CBO members in processing techniques and value-adding for various NTFPs, in particular the most profitable and available in BdM Forest Corridor (apiculture, shea butter and fruit drying are possible candidates) ; (iii) provide training in techniques and tools of business management; and (iv) ensure M&E.

2.6.2. Pilot interventions in MdO that address social assets and reduce climate risk vulnerability in local communities through

- Similarly to BdM, polyculture and adaptive agro-ecological production systems are demonstrated, however, due to the comparatively more arid climate prevailing in the MdO area, locally adapted systems will be specifically promoted. Being a livestock dominated production system, interventions will focus on improving livestock production through animal health and husbandry innovations; rainfed and partially irrigated vegetable/multi-purpose gardens established at the margins of the lake will be improved through promoting climate resilient varieties that at the same time are of high nutritional value. Possible irrigation improvements will be considered.
- Better management of food options will be a focus of the intervention – with lake fish and water birds potentially being replaced by farmed alternatives. Traditional systems will be explored to identify whether specifically developed local practices are particularly relevant or developing adaptation options.
- Identify other priority intervention areas based on local level consultations and development of local level adaptation plans. This may be combined or coordinated with activities under output 3.1.

⁹⁰ See e.g. Kogachi A, and Shaw J (2012), Chapter 18 Experience of Community-Based Adaptation in Burkina Faso, in Rajib Shaw (ed.) Community-Based Disaster Risk Reduction (Community, Environment and Disaster Risk Management , Volume 10), Emerald Group Publishing Limited: 351-371.

Component 3

Climate change adaptation mainstreamed into local and regional development planning and finance

Outcome 3: Climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin are integrated into key sectoral planning and investment frameworks with focus on local and regional levels

Baseline Component 3, Without LDCF Intervention

216. At the baseline, efforts to incorporate climate change adaptation in broader development frameworks at country level and in targeted vulnerable areas includes the following interventions (described in more in [Section 1.4.3](#)):

- **UNDP Programs:** Projects such as the COGEL and one on local governance and administration are providing ample opportunities to infuse climate risk, resilience and adaptive livelihoods into local environmental governance. With strong training components, these and other UNDP projects (e.g. the GFCDR and UNDP DRR mentioned further down) operate both at the national and sub-national levels. These initiatives will however not duplicate what is being proposed under Component 3, which is specifically oriented towards the application of relevant sectoral plans at the project zone's level.
- **PRDs under SP-CONEDD:** a key conduit for mainstreaming climate change adaptation into local and regional development planning and finance. SP-CONEDD is a leading institution in charge of promoting environment and sustainable development policies and regulation. Its role under Component 3 will be to identify, together with other stakeholders, climate change adaptation mainstreaming opportunities in the project zones with respect to planning and finance.
- **PAGIRE:** has made important progress with respect to developing a body of policies and operational tools related to IWRM. At the scale of hydrographic basins there are specific tools for planning and programming water resource management. These are the Master Plans for the Development and Management of Water Resources (SDAGE) and the Sub-Basins Water Resource Management Master Plans (SAGE). Yet, there is room for a much stronger integration of climate change impacts and adaptation measures into SDAGEs and SAGEs, in particular those for Mouhoun-Sourou and Oursi Basins.
- **GFCDR and UNDP DRR:** projects that apply policy mainstreaming as a means to ensure that disaster management and disaster risk reduction get incorporated into the country's overall response to disaster and crisis events. Climate change is but one of the elements that is taken into consideration in the approach (e.g. regarding the increased likelihood of such events in the future). Yet, the vulnerabilities that this project proposes to address do not necessarily fall into the 'disaster' category, although some may exacerbate the impact of a disaster situation with a climatic background. Hence, the mainstreaming efforts engendered by the GFCDR and UNDP DRR projects are an important part of the development baseline for Component 3, but insufficient to address all of the relevant vulnerabilities in natural and social assets targeted by the project through mainstreaming into local and regional development planning and finance.

217. In spite of the solid baseline for this component, existing institutional and policy frameworks and key sectoral planning and investment frameworks have only partially taken climate change considerations into account. There have been several efforts in this respect and commendable progress was made in the past few years, including though adaptation specific interventions that address the climate agenda in the development of national capacities at institutional and systemic levels. Yet, on-the-ground interventions from Component 2 would definitely lack a more decisive policy and investment support to become sustainable. Although willing to collaborate, none of the above-mentioned programs, projects and initiatives would be able to expand the scope of their intervention with current resources. Hence, they would not specifically influence sectoral strategies, plans and investments in the BdM and MdO zones towards climate proofing.

218. In order to institutionalize a national adaptation learning approach and culture, specific investments into the systematic documentation of best practices beyond required M&E processes are required,

as well as specific examples of how such learning can be applied to policy and management processes must be show cased. This is currently not taking place in a coordinated and structured manner in Burkina Faso, and adaptation-learning information remains scattered and difficult to access.

219. The estimated cost of ‘the baseline project’ for Component 3 represents \$33.5 million.

Adaptation Alternative Component 3, With LDCF Intervention

220. In the alternative scenario enabled by the GEF managed LDCF funding, adaptation measures and necessary budget allocations will be included in relevant frameworks. This will make an essential contribution both to reducing systemic climatic vulnerabilities and to supporting concrete adaptation measures that will be implemented under Component 2. These measures are not just supportive of on on-the-ground measures to be demonstrated through Component 2. They are additional – i.e. they would not happen through baseline efforts, which respond to the specific objectives of the concerned baseline projects, programs and initiatives.

221. More specifically, the project will ensure that climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin are integrated into key sectoral planning and investment frameworks with focus on local and regional levels. Sectoral strategies, plans and investment projects will include specific actions and budgets for adaptation measures. Key sectors in focus will include the water, livestock, forests, protected area management and rural development in general. The idea is not so much to change national level policies, but more to focus on implementation strategies and plan that will have an impact at site level. Indicatively, the project the work under Component 3 would focus on decentralized-level planning in the provinces of Oudalan (where the MdO Wetlands Basin is located), and of Mouhoun, Sanguie, Balé, Nayala and Kossi (where some of the target forests of the BdM Forest Corridor are located). Three outputs are planned under Component 2.

222. Resources will be dedicated to formally document and process adaptation learning stemming from this specific project intervention, contributing to the establishment of a nationally and internationally accessible knowledge system.

Component 3:	
Baseline:	\$ 33.5 million
Co-financing:	\$ 9,007,000
LDCF grant requested:	\$ 405,665

Output 3.1

Climate risk management and climate resilient landscape management are integrated into the management (or master) plans for the BdM and MdO and relevant sub-strategies and plans

223. This includes wetland restoration, bushfire prevention, natural storm water control, natural increased infiltration measures, etc. Adaptation options that will be demonstrated through Component 2 will be integrated into the management plans (or master plans) for the relevant provinces and communes in BdM and MdO, so as to ensure that these plans become climate-proof. The focus is on landscape management and on natural resource management practices. Activities

under this first output will cater for the introduction of elements such as climate risk and climate resilience in the planning. The following adaptation measures will be focused on: wetland restoration, bushfire prevention, natural control of storm water, measures to increase infiltration in areas around water bodies such as the Mouhoun River, its tributaries and streams in the BdM Forest Corridor, and as the lakes of the MdO Basin.

Activities:

- 3.1.1. **Identify key policy opportunities for project interventions and integration of lessons learnt** beyond the opportunities identified during the PPG. This includes the development of clear policy influencing strategies for all selected/prioritized instruments to be achieved during project horizon and integrate them into project plans.
- 3.1.2. **Facilitate integration of climate risk management and climate resilient landscape management into the management (or master) plans for the BdM and MdO** through the natural resource management options demonstrated (including wetland restoration, bushfire prevention, natural storm water control, natural increased infiltration measures etc.). Basin. Based on the adaptation learning stemming from outputs 2.1 to 2.5, relevant policy recommendations will be distilled and integrated into relevant policy planning processes at the regional and sub-regional level.
- 3.1.3. **Facilitate the incorporation of the climate resilient polyculture model, tested through Component 2, into relevant forestry, agricultural and livestock management strategies, plans and investments** for the BdM Forest Corridor and the MdO Wetlands Basin. Based on the adaptation learning stemming from output 2.6, relevant policy recommendations will be distilled and integrated into relevant policy planning processes at the regional and sub-regional level.
- 3.1.4. **Guide climate resilient and evidence-based regional and sub-national planning of transhumance** including the possibility of developing additional water resources through establishing dams elsewhere in the MdO basin. This includes through commissioning of relevant baseline studies to inform public debate and participatory planning, with a special consideration of future climate change impacts on water availability.

Output 3.2

Through learning, sharing, partnerships and wide collaboration frameworks, the project and ongoing rural development programs and related initiatives in the MdO Wetlands Basin and the BdM Forest Corridor address climate change concerns and options in their planning and implementation

224. The last output focuses on learning, sharing, partnerships and wide collaboration frameworks. This may include the iterative participation of CONEDD (including all its members) and project staff into the Adaptation Learning Mechanism (ALM), amongst other. With respect to partnerships and collaboration, this will involve efforts to formalize agreements with on-going rural development programs and related initiatives in the MdO Wetlands Basin and the BdM Forest Corridor. The aim is to coordinate site-level and policy interventions, as well as to ensure that these related initiatives address climate change concerns and options in their planning and implementation. Activities may also include also specific capacity building measures with focus on institutions involved in landscape level planning both at the national level and in the provinces of Oudalan, Mouhoun, Sanguie, Balé, Nyala and Sourou.

Activities:

- 3.2.1. **Linked to output 1.2, develop and implement a capacity development and communication plan facilitating the uptake of project learning into national, regional and sub-regional policy processes.** Based on initial consultations that determine information and learning needs of key target groups, innovative approaches to learning, capacity development and communication are being developed. The project makes

relevant budgetary provisions that ensure that such learning is not dealt with as an afterthought, but implemented as a key priority of the project interventions. A focus is to identify end-users' needs and tailor-make events and products that will aide these end-users in a meaningful way to integrate climate resilient planning into future actions.

- 3.2.2. **Document learning approaches and share via a long-term accessible platform (i.e. website) for replication.** Learning, capacity development and communication approaches and products (incl. knowledge products) will be well documented throughout the project lifetime. For example the full process of organizing a technical learning session on climate risk assessment and climate resilient planning for regional technical staff of various relevant line ministries will be documented and made available in form of templates. All relevant presentation and working sessions will be packaged as “learning modules”, which can be replicated elsewhere and at any time. In this manner the resources developed by this project can be made available beyond the project for a greater use throughout Burkina Faso.

Cost Overview	Baseline estimates (\$ M)	Co-financing (\$)	LDCF (\$)
<i>Component 1</i>	13.1	1,299,000	1,034,000
<i>Component 2</i>	49.3	19,441,541	5,260,335
<i>Component 3</i>	33.5	9,007,000	405,665
<i>Project Management</i>	-	925,000	300,000
Total	95.9	30,672,541	7,000,000

2.6 Key indicators, risks and assumptions

225. Key indicators, risks and assumptions are indicated in the Project Results Framework found in Part 3 of this document, while the Risk Analysis and log in Annex 2. The Project Results Framework integrated the Adaptation Monitoring and Assessment Tool (AMAT), which is used to measure progress toward achieving the outputs and outcomes under the LDCF/SCCF results framework for GEF-5. Indicators have been developed to be Specific, Measurable, Achievable, Realistic and Timebound (“SMART”). Risks and recommended countermeasures were identified during bilateral consultations during the project preparation phase.

2.7 Cost-Effectiveness

226. A number of design options were considered for the project before the final design was proposed. Narrative detail per outcome follows. See also **Annex 5** for the additional cost analysis.

227. **Under Outcome 1:** Two outputs are mentioned.

228. Regarding output 1.1, the cost effectiveness of the system developed by the project is assured by:

- Developing the SICOFORMO system a sub-component of the existing ONEDD system
- Working from Dori and Dédougou as the two project sites for IT-related affairs as they are well linked to the Internet, transportation links and other networks. Furthermore, these two centers are already participating in the Network for improved environmental information management (RIDEB)
- The ONEDD system is managed by the project’s executing agency, which already hosts the necessary servers and have management and technical staffing to oversee and support the project. The SICOFORMO development here further positions DCIME as the center of coordination for existing and newly emerging information systems

229. Regarding output 1.2, a stakeholder needs assessment will ensure products are well targeted to

needs, and for example low cost options are explored. The project is looking for innovative and locally suitable communication channels to disseminate information, e.g. the existing daily radio shows on environmental affairs. Training materials will be developed which do not rely on holding a training event.

230. **Under Outcome 2:** Planning and priority-setting activities under Output 2.1 contribute to the improved targeting of adaptation measures and increase the likelihood that measures will minimize costs. Furthermore the project is working very closely with government and extension services, trying to strengthen the mechanisms that are already in place. The measures under Component 2 are designed to strengthen donor coordination and more generally coordination amongst actors at a regional scale. Finally, the project has selected only two demonstration areas, minimizing logistics and other costs of engagement. The two areas are indeed quite large and can have a wide strategic impact (especially regarding water resources); at the same time developing outputs that can be adapted elsewhere.
231. Ecosystem-based adaptation approaches deliver a range of benefits and co-benefits. This puts it in an advantageous cost-benefit situation when compared to other solutions to climate change (e.g. infrastructural). By considering the need for performance data at the outset of the intervention, the project evaluation framework (see Section 3) is structured to collect relevant information. Collecting data on the cost benefit of EBA approaches will provide the evidence base for more targeted investments now and in future.
232. **Under Outcome 3:** The project's third component relies heavily on the situation of the project in SP-CONEDD, benefiting from access to other projects and strategic, planning, and investment processes.
233. As compared to other options, including non-EBA, the proposed alternative stands out as the most cost-effective and confirms the strategic choices made at concept/PIF stage.

2.8 Sustainability

234. The project has been carefully designed to maximize the potential for the long-term sustainability of the interventions in biodiversity conservation and sustainable land management in the following areas:
235. **Environmental sustainability** will be promoted through the project by a participatory tracking system (Activity 2.1.4) and phased approach described in Section 2.3, wherein small demonstration projects will be undertaken initially to generate experimental data. This approach (on a smaller scale) provides feedback, helps confine any problems that might develop to a manageable scale, and helps increase that scaled-up efforts will reach their intended goals. Also within Component 2 (Activity 2.1.2), the local adaptation plans put communities in the driving seat of their adaptation planning and implementation; and emphasizes that adaptation efforts will exceed the lifespan of the project.
236. **Institutional sustainability** will be achieved by hosting the project in SP-CONEDD, who is at the center of most relevant initiatives nationwide. The coordinating function of the Secretariat increases likelihood that capacity built through the project will be maintained and shared. Investments in institutional capacity are explicitly made, especially through Components 1 and 3, plus the experience of delivering Component 2 at regional and local levels. In terms of IT systems, the 'SICOFORMO' is envisaged to be developed within the existing ONEDD system also hosted in SP-CONEDD and with sites part of existing networks. This ensures that all investments made by

the project can be carried forward in the course of normal government business. Regionally, the project will work through the existing government channels and extension services rather than set up new mechanisms.

237. **Social sustainability** will primarily be enhanced in the project through working through existing (government and non-government) organizations at the two project zones, explicitly targeting women and other vulnerable groups with project activities. Women are often left while men migrate for employed, so their engagement in the project is recognized as critical to sustainability. As above, the approach of starting small with demonstration activities then scaling-up promotes a momentum and allows the project to generate more support, improving the targeting of benefits.

2.9 Replicability

238. This is a pioneering EBA project for Burkina Faso and indeed West Africa, therefore its results will be of great interest. The project will have therefore a major emphasis on communication of lessons and results, evidence-based for interventions, and building capacity. Internationally, UNDP's Adaptation Learning Mechanism (ALM) will be used as a dissemination and sharing tool that is accessible by all and constantly updated with the most recent information from the project. The PMU will be required to contribute to ALM on a regular basis noting case studies, successes and challenges. Regionally, the project will feed information into processes such as the Great Green Wall for the Sahara and the Sahel Initiative (GGWSSI). Nationally, the project's situation within SP-CONEDD is ideal for dissemination and influencing other processes.
239. Regarding Component 1, the SICOFORMO system and related outputs can be adapted by other end-users. The emphasis on active use of knowledge products by regional planners, local commune leaders and local resource managers for NRM planning and budgeting and for guiding the sighting and planning of adaptation activities encourages replication. As does the recognition of the need to develop products geared to women and cognizant of the very high illiteracy rate in Burkina. Spanning Components 1 and 2, the project design aims track the use of knowledge products, refine their design, and contribute to their replication. Activity 1.2.4 involves sharing of experiences with other regions. Participatory tracking systems planned for (in Activity 2.1.4) encourage reflection on what works and what does not, promoting a continuing dialogue and sharing with others. Component 3 of the project has an explicit focus on replication e.g. via upstream policy influence and mainstreaming.

2.10 Stakeholder Involvement

240. Participation and engagement are the cornerstones of effective EBA. There are two levels at which participation/engagement will occur (i) within the implementing group; and (ii) the broader constituent group. The implementing group incorporates organizations responsible and accountable for the project and those responsible for activities that influence the project, for example, institutions that have a role in the management of ecosystems. The constituent group includes stakeholders that have an interest in the project areas. Successful progress towards an EBA will require engagement from a broad base of people, to ensure reduction of sectoral barriers, to facilitate trust and information sharing and to allow for high levels of understanding and vision for the project areas.

2.10.1 Stakeholder baseline analysis

241. During the project preparation phase, a series of workshops were organized, accompanied by extensive bilateral consultations. The table below gives an overview of these and points to available documentation.

Table 6: Meetings and consultations during the PPG phase

Event	Detail	Outcomes	Documentation available from UNDP CO
<i>Public Events</i>			
National PPG inception workshop, 12 Sept 2013	Launch of the project preparation phase to national stakeholders. Carried out jointly with the launch of a sister project	Feedback on PPG planning and PIF content, especially identifying collaboration partners for the project	Workshop report (in French)
Regional stakeholder workshop at Dédougou for BdM, 11 Oct 2013	Took place at the regional directorate for agriculture and food security for the BdM.	Guidance for project design, e.g. how to identify the most vulnerable forest areas Confirmation of site selections (ensuring e.g. Boromo is not overlooked) Reviewed the feasibility of the proposed measures, and the need for good communication of the project via the local media	Workshop report (in French)
Consultation in BdM locations, Oct & Nov 2013	Detailed consultations took place with communities in all villages surrounding the forests and river corridor. Data collection and interviews covered the relationship between the communities, ecosystems and livelihoods, specifically: a. Those who depend on the forest and the river; b. Those who do not depend on these ecosystems; c. The threats to these ecosystems and the livelihoods of communities; ii. The level of dependency of the village vis-à-vis the two ecosystems; iii. The analysis of the vulnerability of community activities to climate change; iv. The village organization and its relations with the outside; and v. The social acceptability of the project. The consultation sessions were held in plenary style, during which discussions were guided using tools such as semi-structured interviews, and participatory analysis tools like "H-form" for the analysis of vulnerability to climate change. In depth technical meetings with local officials were also held.	Site selections Guidance for project design	Field consultations report (in French)
Regional stakeholder workshop Gorom Gorom	Took place at the provincial office for MEDD in Oudalan. 30 individuals representing regional, provincial and community stakeholders attended.	Guidance on project design, e.g. should take into account the nearby "Forage Christine", a	Workshop report (in French)

Event	Detail	Outcomes	Documentation available from UNDP CO
for MdO, 9 Oct 2013		major water infrastructure installed in 2012 that enables dry season access to pastures in its area confirmed the proposed sites for the EBA project intervention, and emphasized building from the work of NGOs and CSOs already working at the sites. Links to other initiatives made, e.g. the Great Green Wall and Authority for an Integrated Development of the Liptako Gourma Region (<i>Autorite de developpement integre de la region du Liptako-Gourma, ALG</i>)	
Consultation des acteurs dans la zone de MdO, Oct & Nov 2013	Consultations détaillées avec les acteurs de 7 villages (cf rapport Kaboré)	Site selections Guidance for project design	Field consultations report (in French)
Validation workshop, Ougadougou, February	More than 57 stakeholders participated in the PRODOC validation workshop	PRODOC generally well accepted. There were requests for adjusting certain passages and for laying the foundation work for a more detailed planning of activities on the ground.	11 Feb 2014 Summary report prepared in French, but only in draft.
<i>Bilateral consultations :</i>			
Consultations in Centre-West region, 30 Sept-1 Oct 2013, again 4 Oct	Various mayors, SDEDD/SDRAH/SDASA, DREDD, DRASA, CPP, ACRIC, DRRAH, OCADES, Local water agency, etc.	Establishing collaboration, technical feasibility of proposals, etc	Consultation report (in French), Résultats Mission de prospection du 30/09 au 04/10/2013 per village in MdO
Consultations in Boucle de Mouhoun, 1-3 Oct 2013	Various mayors, SDEDD/SDRAH/SDASA, DRASA, CPP, ACRIC, DRRAH, Local water agency, etc.		

2.10.2 Stakeholder involvement plan

242. The Stakeholders identified during project preparation will continue to be implicated in project

implementation. A stakeholder involvement plan has been created to provide a framework to guide interaction between implementing partners and the key stakeholders, particularly end-users to validate project progress. All stakeholders involved in the baseline self-capacity assessment will be addressed again in order to track the efficacy of Stakeholder capacity building both operationally and technically. Also, the women's interest organizations, the Women in Law and Development in Africa organization, WILDA and the Women's Forestry Association, will continue to be implicated and consulted in order to ensure women are properly engaged/warned. These gender-focused NGOs/CSOs will conduct the gender disaggregated survey indicating the receipt of alerts and utility of weather/climate information planned in Output 1.2.

243. The project's design incorporates activities and mechanisms to ensure on-going and effective stakeholder participation in project implementation:

- Project inception workshop to enable stakeholder awareness of the start of project implementation: The project will be launched by a multi-stakeholder workshop. This workshop will provide an opportunity to provide all stakeholders with the most updated information on the project and the project work plan. It will also establish a basis for further consultation as the project's implementation commences.
- Project Steering Committee to ensure representation of stakeholder interests in project: A Project Steering Committee (PSC) will be constituted to ensure broad representation of all key interests throughout the project's implementation. The representation, and broad terms of reference, of the PSC are further described in Section I, Part III (Management Arrangements) of the Project Document.
- Project communications to facilitate on-going awareness of project: The project will develop, implement and maintain a communications strategy to ensure that all stakeholders are informed on an on-going basis about the project's objectives and activities; overall project progress; and the opportunities for involvement in various aspects of the project's implementation.
- Capacity building: Project activities are focused on building the capacity – at the systemic, institutional and individual levels – of the institutions, NGOs, and other stakeholders to ensure the sustainability of initial project investments.

244. Further Details of the Stakeholder Involvement Plan are provided in Annex 6.

2.11 Expected benefits, including socio-economic

2.11.1 Development benefits

245. The expected benefits of the project are:

- Burkina Faso will count on a tailor made geo-based system specifically for analyzing climate risk and climatic vulnerabilities linked to the management of natural and social systems.
- National capacity for dealing with climate risk and addressing climate driven/exacerbated vulnerabilities will be enhanced, not just through the development and use of the system, but also through the training of national and provincial planners in the application of products from the system.
- Capacity of local stakeholders in the project zones to perceive climate risk and to implement and cost adaptation measures in natural resource management activities and livelihoods development will be significantly enhanced, in particular with respect to the management of wetlands, forests, pasture, fire, hydrological systems and agro-sylvo-pastoral production systems.
- National capacity for mainstreaming climate change adaptation into sectoral planning and investment frameworks with focus on local and regional levels will be increased.
- Collaboration frameworks and partnerships for adaptation with respect to the BdM Forest Corridor and the MdO Wetlands Basin will be consolidated.
- Overall adaptation learning will be enhanced by the dissemination of the project's experience.

246. In the short- to medium-term, this project supports national development goals and plans to achieve **Millennium Development Goals (MDGs) 1, 3, and 7:**

- **MDG 1: Eradicate extreme poverty and hunger** – At least 150,000 people are dependent on forestry, freshwater fishing, livestock rearing, agriculture and small game hunting for their livelihoods in both in the BdM Forest Corridor and in the MdO Wetlands Basin. The LDCF portion of the project will finance the additional costs of maintaining natural assets and related agro-ecological and hydrological services essential to local livelihoods in the face of climate change, including increased climatic variability. In doing so, the overall project will reduce vulnerability to poverty and hunger by generating socio-economic benefits at the national and local levels. The livelihoods-focused outputs 2.5 and 2.6 will bring immediate socio-economic benefits to farmers involved in the introduction of polyculture and adaptive agro-ecological production systems in communal lands. While, due to the demonstration character of the activities, these benefits are likely to be of limited scope, the project strategy is slated to bring longer-term socio-economic benefit to involved communities, as opposed to the more short-term ones based on the rapid depletion of natural assets.
- **MDG 3: Promote gender equality and empower women** – Women are a very important group under this project; they are the ones frequently left as heads of households while men migrate for employment. Their role in the management and protection of natural assets (water, forests, fish and wildlife) is critical, though they do not often retain the rights to these resources their importance in managing would suggest. Furthermore, women, children and the elderly are frequently amongst the more vulnerable of the poor, and lacking opportunities for wage-based employment. In the face of climate change, their vulnerability will likely be exacerbated. Hence, women will not only be a key beneficiary of adaptation measures under this project, but they will also play a protagonist role in promoting the mainstreaming of adaptation measures in the local economy. Furthermore, project indicators will be broken-down by gender where applicable and gender concerns incorporated in the planning of specific activities.
- **MDG 7: Ensure environmental sustainability** – The project will ensure a transition to a much more rational use of natural assets and the long-term maintenance of a stream of agro-ecological and hydrological services associated with it, including through adequate landscape-level planning frameworks. Sustainability of water resources in this water scarce project are emphasized; and in some cases the root causes are linked to potable water and sanitation at local level (especially around the MdO).

247. The project will make a define contribution to women’s empowerment at the local level, defined as the “sum total of changes needed for a woman to realize her full human rights – the combined effect of changes in her own aspirations and capabilities, the environment that surrounds and conditions her choices, and the power relations through which she negotiates her path.”⁹¹ In other words, agency, relations and structures - the project will make a contribution to all three dimensions:

2.11.2 Other co-benefits

Relations: Power relations through which she negotiates her path

Examples:

- Being involved in local decision-making processes
- Getting recognized (by external groups) as an important stakeholder in natural resource management and adaptation
- Having their issues and ideas heard through a local adaptation process (using good practice in participation)

⁹¹ As defined by Care International. See CARE International Climate Change Brief: Adaptation, gender and women’s empowerment [[Link](#)] (Accessed on 10 Jan 2014).

Agency: Changes in her own aspirations and capabilities

Examples:

- Knowledge of climate trends
- Access to appropriate measures (incl. technologies) for adaptation
- Access to income-generating employment via the HIMO approach; and, when women are able to earn an income, their families are more likely to benefit

Structures: Environment that surrounds and conditions her choices

Examples:

- Gender equitable adaptation planning at local level (and support from national and regional level to implement these plans)
248. Medium to long-term societal benefits catalyzed by the project will include increased land productivity and yields for both cash (e.g. cotton) and food crops (sorghum, maize, millet, groundnuts and cowpea), increased fish catch, availability of water resources to livestock throughout the year in places where water is scarce, expanded grazing grounds, increased tourism revenue (where applicable), more varied and expanded availability of forest resources, reduced fire risks, among others. Considering that resource-depleting strategies may make economic sense in the short run under certain circumstances, it will be key for the project's success to not just enforce the pursuit of long-term benefits, but also to create incentives for the realization of these benefits.
249. Under increasingly variable climate scenarios, short-sighted practices that degrade agro-ecological and hydrological systems will make less economic sense and the benefits of maintaining and enhancing resilience will be and increasingly cost-effective adaptation strategy that not only maintains, but also increases socio-economic benefits.

2.12 Safeguards

250. The UNDP Environmental and Social Screening template has been applied to ensure environmental and social safeguards are in place. The full results of the screening are available through this [\[Link\]](#). According to this checklist, the project is considered Category 3a: Impacts and risks are limited in scale and can be identified with a reasonable degree of certainty and can often be handled through application of standard best practice.
251. Environmental safeguards that have been applied include:
- Compliance with international conventions and agreements ratified by Burkina Faso, e.g. Ramsar Convention
 - Compliance with the existing management plans for the Ramsar site and Classified Forests, and close collaboration with the relevant authorities
 - Application of “best available techniques” for wetlands and forest management, and good environmental management practices during project implementation and operation, notably the phased approach detailed above.
252. These safeguards have been applied during the project design phase, including in the undertaking of the feasibility studies, and will be carried through to project implementation.

3 Project Results Framework

3.1 Programmatic Links

<p>This project will contribute to achieving the following Country Program Outcome as defined in CPAP: Outcome 1.4 “National and grassroots entities practice an integrated approach to sustainable development and natural resource management.”.</p>
<p>Country Program Outcome Indicators: Indicator 1.4.7 % of local management plans formulated or revised with climate change adaptation considerations</p>
<p>Primary Applicable Key Environment and Sustainable Development Key Result Area: <u>Promote climate change adaptation</u></p>
<p>Applicable GEF (LDCF) Strategic Objective and Program: LDCF CCA-2 – Increasing Adaptive Capacity: Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level LDCF CCA-1 – Reducing Vulnerability: Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level</p>
<p>Applicable GEF (LDCF) Expected Outcomes: Outcome 1.1: Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas Outcome 1.2: Reduced vulnerability to climate change in development sectors Outcome 2.1 Increased knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas</p>
<p>Relevant GEF (LDCF) Outputs: Output 1.1.1: Adaptation measures and necessary budget allocations included in relevant frameworks Output 1.2.1: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability Output 2.1.2: Systems in place to disseminate timely risk information</p>
<p>Applicable GEF (LDCF) Outcome Indicators: 1.1.1 Adaptation actions implemented in national/sub-regional development frameworks 1.1.1.1 Development frameworks that include specific budgets for adaptation actions 1.2.14 Vulnerability and risk perception index (Score) - Disaggregated by gender 2.1.1 Relevant risk information disseminated to stakeholders 2.1.1.1 Updated risk and vulnerability assessment 2.1.1.2 Risk and vulnerability assessment conducted 2.1.2.1 Type and No. of monitoring systems in place</p>
<p>Gender Marking: Data to be recorded in UNDP’s Atlas system by the project's year 2 and by its end: - Total number of full-time project staff that are women - Total number of full-time project staff that are men - Total number of Project Board members that are women - Total number of project Board members that are men - The number jobs created by the project that are held by women - The number jobs created by the project that are held by men</p>

3.2 Logframe

#	Indicator*	Baseline	Targets by End of Project	Source of verification	Risks and Assumptions
Project Objective: To reduce local communities' vulnerability to the additional risks posed by climate change and build their resilience with focus on the natural resource management sectors in the Boucle du Mouhoun Forest Corridor and the Mare d'Oursi Wetlands Basin					
1	<i>AMAT indicator 1.2.14</i> Vulnerability and risk perception index (Score) - Disaggregated by gender. Metrics: 1. Extreme Vulnerability 2. High Vulnerability 3. Medium Vulnerability 4. Low Vulnerability 5. No Vulnerability	Survey conducted during PPG. Score = 1. Extreme Vulnerability (both men and women in all sites) <i>Note: Women are assumed to be more vulnerable than men, though this is not necessarily reflected in the aggregate indicator as currently presented. Also, it is acknowledged that sites in the Mare d'Oursi present a high level of challenge and targets for vulnerability reduction need to be more modest.</i>	<u>For sites in the BdM:</u> [1] The confluence of Mouhoun-Sourou [2] The Kari-Ouro-Tisse-Tiogo-Bwo-Kalio Complex [3] Sorobouli and Nosébou Classified Forests Target Scores = 3. Medium Vulnerability (both men and women in all BdM sites) <u>For sites in the MdO:</u> [4] Mare d'Oursi Basin villages Target Score = 2. High Vulnerability (both men and women)	Surveys conducted (at project start and end) As proxies, poverty and food insecurity scores/indicators at project sites level	<u>Assumptions:</u> Emphasis on broad-based natural and social resilience yields multiple benefits High level of vulnerability are currently due to poverty, resource dependence, but will be aggravated by climate change
2	<i>AMAT indicator 1.1.1</i> Adaptation actions implemented in national/sub-regional development frameworks (number and type) – as per <u>sub-indicators</u> below:	Broken down by sub-indicators below	Broken down by sub-indicators below	Project's periodic reports, validated by independent evaluations and reviews	<u>Risk:</u> Uncertainty in climate-related data and projections at regional and local levels provides insufficient parameters for planning adaptation measures
2a	Adaptation actions implemented with respect to 'knowledge and understanding of climate risk' at the national level and in project zones	0 actions	At least 2 key actions successfully implemented: (1) SICOFORMO in place, live and deemed useful by its clients; (2) 100 people trained in SICOFORMO's usage among national and provincial planners, local commune leaders and staff from NGOs/CSOs, of which half evaluate the training positively according to criteria tbd.	As above	

#	Indicator*	Baseline	Targets by End of Project	Source of verification	Risks and Assumptions
2b	Adaptation actions implemented linked to 'Demo activities aimed at vulnerability reduction and resilience strengthening with focus on natural and social assets'	0 actions	At least 5 key actions successfully implemented: (1) wetlands management & restoration in MdO; (2) flood and erosion control, river bank protection and forest enrichment in BdM; (3) anticipatory bushfire control in forests BdM; (4) climate resilient rangeland management MdO; (5) polyculture techniques disseminated	As above	
2c	Adaptation actions implemented on 'Climate change adaptation mainstreaming	0 actions	At least 2 key actions successfully implemented: (1) landscape management planning have incorporated demo actions; and (2) learning, sharing, partnerships and wide collaboration frameworks.	As above	
Outcome 1: Increased knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system					
Outputs:					
1.1	A geo-based climatic, agro-ecological and hydrological information system ('SICOFORMO'), hosted by SP/CONNED and focusing initially on the BdM Forest Corridor and the MdO Wetlands Basin, is operational by end of project year 1 and it enables the analysis of climate-driven vulnerabilities and the cost-effective planning of specific adaptation interventions in Component 2 for strengthening social and natural assets				
1.2	Approx. 30 national and provincial planners, plus 60 local commune leaders and 30 staff from NGOs/CSOs are trained on the use and interpretation of analyses from the 'SICOFORMO' system with the aim of using them for climate-adaptive development planning and implementation				
3	<i>AMAT indicator 2.1.1</i> The relevant risk information disseminated to stakeholders – <i>Note: precludes the achievement of targets in the two following sub-indicators:</i>	0 = no info about risk disseminated to stakeholders at local level	Yes = 1; Knowledge products from the geo-based agro-ecological and hydrological information system (like maps, technical analyses and locally targeted publications) are being actively used by national planners and local commune leaders for NRM planning and budgeting and for guiding the siting and planning of adaptation activities in Component 2	Annual consultations conducted from Year 2 on in each village for informing indicators 3 and 4, collect other data and disseminate relevant risk info Project's periodic reports, validated by independent evaluations and reviews	<u>Assumption:</u> Sufficiently good info on climate risks is available so that risk and vulnerability assessment can be linked to adaptation plans at local levels <u>Risk:</u>
3a	<i>AMAT indicator 2.1.1.2</i> Updated risk and vulnerability assessment (at local level) Yes=1, No=0	0 = no risk and vulnerability assessments undertaken at local level	Yes = 1; Baseline risk and vulnerability assessments for the BdM Forest Corridor and MdO Wetlands Basin are conducted by end of project's year 2 and updated annually throughout project duration	As above	Stakeholder engagement faces challenges due to skewed local expectations towards the project

#	Indicator*	Baseline	Targets by End of Project	Source of verification	Risks and Assumptions
3b	<i>AMAT indicator 2.1.1.1</i> Risk and vulnerability assessment conducted (at local level) Yes=1, No=0	0 = no risk and vulnerability assessments undertaken at local level	Yes = 1; Baseline risk and vulnerability assessments for the BdM Forest Corridor and MdO Wetlands Basin are conducted by end of project's year 2 and updated annually throughout project duration	As above	With technology advances in the age of "big data" the SICOFORM system risks becoming quickly obsolete
4	<i>AMAT Indicator 2.1.2.1</i> Type and No. of monitoring systems in place	0 monitoring systems beyond those already managed by ONEDD and which is part of the project's baseline's intervention.	1 monitoring system; i.e. the SICOFORM system is functional, nested within ONEDD and is composed of at least the following 4 monitoring sub-systems: (i) natural assets available (water, forests, wetlands) and ancillary information on their use; (ii) identification of critical areas for agro-ecological and hydrological services and their role in livelihoods; (iii) special features such as bushfire incidence, economic activities, population aggregations; and (iv) an overlay with the likely climate change impacts under different modeling scenarios, pointing out to areas of climate risk and vulnerability for communities.	ONEDD's website Project's periodic reports, validated by independent evaluations and reviews	

Outcome 2: The climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO are strengthened by focusing on vulnerable natural and social assets in target project sites

Outputs:

- 2.1 Effective demonstration site level participatory governance and project implementation structures are established, local adaptation plans are implemented, and local commune leaders and resource users are trained in climate adaptive and anticipatory management of natural and social assets
- 2.2 Critical wetland areas, covering some 1,600 ha and of ephemeral rivers and lakes in the MdO Wetlands Basin, and which support 24,000 livelihoods, become more resilient to desiccation through improved management of water usage and soil (e.g. deforestation, trampling by livestock), and the replanting and protection of indigenous grasses and herbaceous vegetation resilient to significant climatic variance
- 2.3 Flood and erosion control is ensured through a "surgical" and climate anticipatory approach, by establishing flood tolerant and erosion resistant grassed and herbaceous swales
- 2.3 Flood and erosion control is ensured through a "surgical" and climate anticipatory approach in the BdM, by establishing flood tolerant and erosion resistant grassed and herbaceous swales
- 2.4 Gazetted forests in the BdM are protected against climate-induced bushfire
- 2.5 Through locally decided and enforced by-laws, an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin, aimed at avoiding overstocking during the dry season, is implemented with the support from sedentary communities and transhumant groups
- 2.6 Polyculture and adaptive agro-ecological production systems in communal lands (at least 400 ha)

#	Indicator*	Baseline	Targets by End of Project	Source of verification	Risks and Assumptions
5	<i>AMAT added indicator 1.2.1.10</i> Changes in livestock stocking percentage in wetland areas denote the adoption of a range management system that is more adaptive, sustainable and therefore resilient ⁹²	at 200% or more – and at unsustainable levels <i>Note: As a rule of thumb, a stocking percentage above 100 indicates overstocking and below understocking.</i>	Below 150% and ideally btw 80-120% – showing good prospects for the sustainable adoption of a climate adaptive range management model introduced by the project <u>Ranges for assessing the indicator:</u> < 50% = understocking Btw 50% and 150% = ideal range 100% = stocking levels are equal to the carrying capacity > 150% = overstocking > 200% = a clearly unsustainable stocking percentage	Reports on stocking levels in pre-defined wetlands sites that will be managed compared to unmanaged sites, both with surface areas duly measured and mapped.	<u>Assumptions:</u> Communities are willing to engage in EBA activities and see net benefits from it <u>Risks:</u> Communities resist changing the <i>status quo</i> of livestock management in the Mdo Ecosystem restoration activities are not adequately scoped, planned or implemented, and produce disappointing results
6	<i>AMAT 1.2.1.9 added indicator</i> Wetlands and natural grasslands rehabilitated	0ha	<u>MdO:</u> Approx. 500ha/per year of degraded land is rehabilitated; i.e. min. 3,000 ha in total by project end.	Local adaptation plans and monitoring results reviewed as part of APRs/PIR	
7	<i>AMAT 1.2.1.11 added indicator</i> Surface areas restored, rehabilitated or enriched with grassed, herbaceous and wooded vegetation, reducing loss of top soil, protecting riverbanks and improving infiltration in critical areas	0 ha	By years 5 / 6 of the project and focusing on achievements attributable to the project: <u>At MdO:</u> 50 ha of lakeside and -shore areas have been enriched with bourgou (<i>Echinochloa stagnina</i>) 500 ha of degraded lands within the basin have been seeded with native and useful herbaceous and woody species 3000 ha of “abandoned” land (or land under long-term fallow) are reforested using an ecosystem-based approach <u>At BdM:</u> 500 ha riverbanks restored 5000 ha of “abandoned” land (or land under long-term fallow) are reforested using an ecosystem-based approach <i>Note: Targets pertain to the total surface area by project where ecosystem services have been sufficiently rehabilitated (or put on a course towards rehabilitation) to continue to render essential goods and services, upon which local livelihoods depend</i>	Project’s periodic reports, validated by independent evaluations and reviews	

⁹² The stocking percentage is calculated by dividing the present stocking in UBT [= *Unité Bovin Tropical*, or Tropical Livestock Units (TLU)] by the potential stocking, also in UBT. Within a well delimited grazing area (often in calculated in the 1000s of ha), the potential stocking is this area divided by the carrying capacity expressed in ha/UBT/yr. Typical carrying capacity of Sahelian wetlands is 3.5 - 5.0 ha/UBT/yr.

#	Indicator*	Baseline	Targets by End of Project	Source of verification	Risks and Assumptions
8	<i>AMAT 1.2.1.12 added indicator</i> Changes in land use practices that reduce the incidence of undesired fire at the landscape level	Every year uncontrolled bush fires, early and late, consume the Sudanian savannas. While early burning causes little damage, late fires destroy all the standing herbage. Various campaigns against bush fires have been carried out in vain, except in the planned pastoral zones and protected areas. (see e.g. Link)	Trends towards a more balanced fire regime are confirmed -- incidence is reduced by 50% vis a vis the baseline <i>Note: Changed practices in BdM forest sites covering some 20,000 ha of forests in BdM forest sites, is evidenced by a decreased bushfire incidence in the area over the course of the project.</i>	Data to be retrieved from NASA FIRMS [Link] and analyzed by the SICOFORM team	
8a	Process level sub-indicators of changes in land-use practices in BdM and MdO	Limited mastery of EBA techniques and no demo activities started	By years 5 / 6 of the project and focusing on achievements attributable to the project: <u>At MdO:</u> - Additional annual availability of 100 tons of feed - Community engagement in river bank protection reaches min 20 ha / village as managed sites benefitting from erosion control through herbaceous and shrub re-vegetation <u>At BdM:</u> - 150 km of fire-breaks established around some 73,000 ha of Classified Forests in the BdM - >200 community members are trained in climate adaptive bushfire management - Polyculture and adaptive agro-ecological production systems are consolidated in 400 ha of communal lands	Project's periodic reports, validated by independent evaluations and reviews	
Outcome 3: Climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin are integrated into key sectoral planning and investment frameworks with focus on local and regional levels					
Outputs:					
3.1 Climate risk management and climate resilient landscape management are integrated into the management (or master) plans for the BdM and MdO and relevant sub-strategies and plans					
3.2 Through learning, sharing, partnerships and wide collaboration frameworks, the project and ongoing rural development programs and related initiatives in the MdO Wetlands Basin and the BdM Forest Corridor address climate change concerns and options in their planning and implementation					

#	Indicator*	Baseline	Targets by End of Project	Source of verification	Risks and Assumptions
9	<i>AMAT indicator 1.1.1.1</i> Development frameworks that include specific budgets for adaptation actions	Current PRDs and PCDs do not reflect climate risks or resilience-building strategies	Development frameworks and strategies that include climate adaptive management measures and budgets: <u>At BdM:</u> 2 Regional Development Programs (PRDs) and 7 Communal Development Plans (PCDs) (Sono, Dédougou Tchériba Oury, Siby, Zamo, Tenado) <u>At MdO:</u> 1 PRD and 2 PCDs (Oursi and Déou)	Reviews (of PRDs and PCDs) as part of APRs/PIR Project's periodic reports, validated by independent evaluations and reviews	<u>Risk:</u> Process of revising and adopting PRDs and PCDs can be slow for various reasons outside the project's control

* Where indicated, reference is made to indicators in the LDCF/SCCF Adaptation Monitoring and Assessment Tool (AMAT).

4 Total Budget and Workplan

Atlas Award and ID	00089466/ 00079493	Atlas Project Title	Adaptation des écosystèmes
Atlas Business Unit	BFA10	Implementing Partner under NIM	SP-CONEDD

4598 Project Components	Impl. Partner	Fund ID	Donor Name	Atlas Budget Acc. Code	Atlas Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	Notes
1) Knowledge support platform on climate change impacts and risks	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	15,000	15,000	15,000	15,000	15,000	15,000	90,000	1
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	10,000	44,000	44,000	44,000	44,000	34,000	220,000	2
	NIM	62160	GEF LDCF	71600	Travel	10,000	20,000	20,000	20,000	20,000	10,000	100,000	3
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies		100,000	100,000				200,000	4
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies	50,000	50,000	50,000	50,000	50,000	50,000	300,000	5
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies	10,000	16,000	16,000	16,000	16,000	6,000	80,000	6
	NIM	62160	GEF LDCF	72800	Information Technology Equipmt	20,000						20,000	7
	NIM	62160	GEF LDCF	74100	Professional Services	3,000	3,000	3,000	3,000	3,000	3,000	18,000	8
	NIM	62160	GEF LDCF	74500	Miscellaneous Expenses	1,000	1,000	1,000	1,000	1,000	1,000	6,000	9
					Sub-Total Comp 1 LDCF	119,000	249,000	249,000	149,000	149,000	119,000	1,034,000	
					TOTAL Comp 1	119,000	249,000	249,000	149,000	149,000	119,000	1,034,000	
2) Vulnerability reduction & resilience strengthening in BdM and Mdo	NIM	62160	GEF LDCF	71200	International Consultants	5,000	5,000	5,000	5,000	5,000	5,000	30,000	10
	NIM	62160	GEF LDCF	71300	Local Consultants	9,000	9,000	9,000	9,000	9,000	9,000	54,000	11
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	47,750	191,000	191,000	191,000	191,000	47,750	859,500	12
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	15,000	15,000	15,000	15,000	15,000	15,000	90,000	1
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	20,000	77,000	77,000	77,000	77,000	57,000	385,000	13
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	55,000	55,000	55,000	55,000	55,000	55,000	330,000	14
	NIM	62160	GEF LDCF	71600	Travel	20,000	67,000	67,000	67,000	67,000	47,000	335,000	3
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies	60,000	60,000					120,000	15
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies		100,000	180,000	180,000	90,000		550,000	16
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies		100,000	200,000	200,000	100,000		600,000	17
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies	50,000	150,000	100,000	100,000	100,000	50,000	550,000	18
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies	35,000	33,000	33,000	33,000	20,000	11,000	165,000	6
	NIM	62160	GEF LDCF	72200	Equipment and Furniture	10,000						10,000	19
	NIM	62160	GEF LDCF	72200	Equipment and Furniture	150,000						150,000	20
	NIM	62160	GEF LDCF	72300	Materials & Goods	50,000	50,000	50,000	50,000	50,000	50,000	300,000	21
NIM	62160	GEF LDCF	72500	Supplies	5,000	5,000	5,000	5,000	5,000	5,000	30,000	22	
NIM	62160	GEF LDCF	72600	Grants		100,000	200,000	100,000	100,000		500,000	23	
NIM	62160	GEF LDCF	72800	Information Technology Equipmt	22,500				22,500		45,000	24	

4598 Project Components	Impl. Partner	Fund ID	Donor Name	Atlas Budget Acc. Code	Atlas Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	Notes	
	NIM	62160	GEF LDCF	73100	Rental & Maintenance-Premises	5,000	10,000	10,000	10,000	10,000	5,000	50,000	25	
	NIM	62160	GEF LDCF	73200	Premises Alternations	20,000						20,000	26	
	NIM	62160	GEF LDCF	73400	Rental & Maint of Other Equip	10,000	10,000	10,000	10,000	10,000	10,000	60,000	27	
	NIM	62160	GEF LDCF	74100	Professional Services	3,000	3,000	3,000	3,000	3,000	3,000	18,000	8	
	NIM	62160	GEF LDCF	74500	Miscellaneous Expenses	1,472	1,472	1,472	1,472	1,472	1,475	8,835	9	
					Sub-Total Comp 2 LDCF	593,722	1,041,472	1,211,472	1,133,972	908,472	371,225	5,260,335		
					TOTAL Comp 2	593,722	1,041,472	1,211,472	1,133,972	908,472	371,225	5,260,335		
3) Climate change adaptation mainstreamed into local and regional development planning and finance	NIM	62160	GEF LDCF	71200	International Consultants		48,000					48,000	28	
	NIM	62160	GEF LDCF	71300	Local Consultants		36,000					36,000	28	
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	12,500	12,500	12,500	12,500	12,500	12,500	75,000	1	
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	6,500	16,500	16,500	16,500	16,500	10,000	82,500	29	
	NIM	62160	GEF LDCF	71600	Travel	5,000	12,000	12,000	12,000	12,000	7,000	60,000	3	
	NIM	62160	GEF LDCF	72100	Contractual Services-Companies	5,000	16,000	16,000	16,000	20,000	7,000	80,000	6	
	NIM	62160	GEF LDCF	74100	Professional Services	3,000	3,000	3,000	3,000	3,000	3,000	18,000	8	
	NIM	62160	GEF LDCF	74500	Miscellaneous Expenses	1,000	1,000	1,000	1,000	1,000	1,165	6,165	9	
					Sub-Total Comp 3 LDCF	33,000	145,000	61,000	61,000	65,000	40,665	405,665		
					TOTAL Comp 3	33,000	145,000	61,000	61,000	65,000	40,665	405,665		
4) Project Management	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	5,000	5,000	5,000	5,000	5,000	5,000	30,000	1	
	NIM	62160	GEF LDCF	71400	Contractual Services - Individ	10,000	17,500	17,500	17,500	17,500	7,500	87,500	30	
	NIM	62160	GEF LDCF	71200	International Consultants	14,000	14,000	14,000	14,000	14,000	14,000	84,000	31	
	NIM	62160	GEF LDCF	74100	Professional Services	3,000	3,000	3,000	3,000	3,000	3,000	18,000	32	
	NIM	62160	GEF LDCF	72400	Communic & Audio Visual Equip	2,500	2,500	2,500	2,500	2,500	2,500	15,000	33	
	NIM	62160	GEF LDCF	72500	Supplies	500	2,000	2,000	2,000	2,000	1,500	10,000	34	
	NIM	62160	GEF LDCF	72800	Information Technology Equipmt	22,500			22,500			45,000	24	
	NIM	62160	GEF LDCF	74500	Miscellaneous Expenses	1,000	2,100	2,100	2,100	2,100	1,100	10,500	9	
						Sub-Total Proj Mgt LDCF	58,500	46,100	46,100	68,600	46,100	34,600	300,000	
	NIM	04000	UNDP	71400	Contractual Services - Individ	10,000	21,000	21,000	21,000	21,000	11,000	105,000	30	
	NIM	04000	UNDP	74300	Contributions	5,000	10,000	10,000	10,000	10,000	5,000	50,000	35	
					Sub-Total Proj Mgt UNDP	15,000	31,000	31,000	31,000	31,000	16,000	155,000		
					TOTAL Proj Mgt	73,500	77,100	77,100	99,600	77,100	50,600	455,000		

TOTAL LDCF						804,222	1,481,572	1,567,572	1,412,572	1,168,572	565,490	7,000,000	
TOTAL UNDP						15,000	31,000	31,000	31,000	31,000	16,000	155,000	
GRAND TOTAL						819,222	1,512,572	1,598,572	1,443,572	1,199,572	581,490	7,155,000	

Budget Notes	
1	National Project Manager: 6-year assignment budgeted for. Tasks are roughly 10% managerial (amount allocated to the project's management budget) and 90% technical (allocated equally across the three components). See TOR in Annex 7.
2	IT and GIS Manager: 5.5-year assignment to support the development, operationalization and integration of SICOFORMO. See TOR in Annex 7.
3	Travel costs in connection with project activities under this Component
4	Service provision contract (International Procurement) to implement activities under Output 1.1: A geo-based climatic, agro-ecological and hydrological information system ("SICOFORMO"), hosted by SP/CONNED and focusing initially on the BdM Forest Corridor and the MdO Wetlands Basin, is operational by end of project year 1 and it enables the analysis of climate-driven vulnerabilities and the cost-effective planning of specific adaptation interventions in the Component 2 for strengthening social and natural assets
5	Service provision contract (International Procurement) to implement activities under Output 1.2: Approx. 30 national and provincial planners, plus 60 local commune leaders and 30 staff from NGOs/CSOs are trained on the use and interpretation of analyses from the 'SICOFORMO' system with the aim of using them for climate-adaptive development planning and implementation.
6	Workshop and meeting costs (bulk) under this component for supporting various activities
7	High capacity server for hosting the SICOFORMO and expanding ONEDD's data management capacity
8	Translations, interpretation services, editorial, webdesign etc. through professional services
9	Miscellaneous costs: insurance, bank charges, security and other blended costs.
10	Ecosystem-based Adaptation expert for (10 weeks, 8 of which in country@ approx. \$3K/week) supporting for adaptation planning and project inception foreseen under Output 2.1 (Effective demonstration site level participatory governance and project implementation structures are established, local adaptation plans are implemented, and local commune leaders and resource users are trained in climate adaptive and anticipatory management of natural and social assets)
11	Professional consultancy support to NGOs/CBOs implementing grants aimed at the technical implementation of outputs 2.5 and 2.6
12	Technical <i>Jumelage Team</i> : Senior mentor and junior technical consultants (national twinned with international) working on technical aspects of the project. See TOR in Annex 7. See TOR in Annex 7.
13	Field Activity Coordinator (x 2): 5.5-year assignment each. See TOR in Annex 7.
14	Field Technical Experts (in planning, M&E) (x 2): 5.5-year assignment each. See TOR in Annex 7.
15	Service provision contract (national procurement) to implement activities under Output 2.1: Effective demonstration site level participatory governance and project implementation structures are established, local adaptation plans are implemented, and local commune leaders and resource users are trained in climate adaptive and anticipatory management of natural and social assets

Budget Notes

16	Service provision contract (international procurement - hydraulics & forestry engineering) to implement activities under Output 2.2: Critical wetland areas, covering some 1,600 ha and of ephemeral rivers and lakes in the MdO Wetlands Basin, and which support 24,000 livelihoods, become more resilient to desiccation through improved management of water usage and soil (e.g. deforestation, trampling by livestock), and the replanting and protection of indigenous grasses and herbaceous vegetation resilient to significant climatic variance
17	Service provision contract (international procurement - hydraulics & forestry engineering) to implement activities under Output 2.3: Flood and erosion control is ensured through a “surgical” and climate anticipatory approach in the BdM, by establishing flood tolerant and erosion resistant grassed and herbaceous swales
18	Service provision contract (international procurement - forestry engineering) to implement activities under Output 2.4: Gazetted forests in the BdM are protected against climate induced
19	Office furniture and IT equipment to the project team at large.
20	Project all-terrain vehicles (x3)
21	Forestry supplies, fuel, vehicle spare parts, light field equipment, including protection, and other materials
22	Various supplies, stationary, camping materials and water purification etc. under this component
23	NGOs and CBOs get involved in supporting EBA in the BdM and MdO through the competitive grant modality. This applies in particular to Output 2.5 (Through locally decided and enforced by-laws, an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin, aimed at avoiding overstocking during the dry season, is implemented with the support from sedentary communities and transhumant groups) and Output 2.6 (Polyculture and adaptive agro-ecological production systems in communal lands (at least 400 ha). For each of the activity sets, NGOs/CBOs will be under professional guidance from a senior pastoralist and agronomist hired by the project.
24	IT equipment to the project team in the field (min. 8 computers, considering needs for substitution) plus peripherals and supplies
25	Utility bills in offices provided by the State. Rental of external rooms as needed to accommodate service providers in the field or other needs
26	Renovation of office space.
27	Vehicle maintenance and rental of heavy duty equipment for water and forestry works
28	Senior economists (1 national for 8 weeks doing most of the prep work; and 1 international, Francophone -- both specialists in public finance and planning) for supporting the adaptation mainstreaming processes foreseen under Output 3.1 (Climate risk management and climate resilient landscape management are integrated into the management (or master) plans for the BdM and MdO and relevant sub-strategies and plans)
29	Communications experts: 5.5-year assignment part-time. Responsible for outreach, communication, lessons learning, press management and other. See TOR in Annex 7.
30	Procurement and Accounting Manager (costs shared UNDP and GEF on a pro-rata basis):

Budget Notes

31	Two (x2) consultancies with standard ToR for UNDP-GEF evaluations: Mid-term Review and Project Terminal evaluation (lump-sum amount for budgeting purposes = \$42K / each consultancy).
32	Project annual audit
33	Communication, including cell phone contracts or airtime and internet connectivity
34	Office supplies
35	Security: common services contribution

5 Management Arrangements

5.1 Project implementation arrangement

253. The project will be implemented over a period of six years (72 months) through UNDP National Implementation Modality (NIM) and Harmonized Approach to Cash Transfer (HACT) procedures. The project will be implemented by the Ministry of Environment and Sustainable Development (MEDD) via the National Council for the Environment and Sustainable Development through its Permanent Secretary (SP-CONEDD), in line with the Standard Basic Assistance Agreement (SBAA) between the UNDP and the Government of Burkina Faso. Execution includes coordinating action on the ground and in the capital, engaging partners and service provider, including those that will be directly tasked with implementation, while also closely monitoring the project and reporting according to procedures. Due to the geographical distance between the two project sites, project activities at each site will be implemented relatively independently of each site; both under the single national Project Management Unit (PMU) situated in SP-CONEDD. Project implementation will be overseen by a Project Steering Committee (PSC) described below.
254. The **Project Board** is responsible for making management decisions for a project in particular when guidance is required by the Project Manager. The Project Board plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities. Based on the approved Annual Work Plan, the Project Board can also consider and approve the quarterly plans (if applicable) and also approve any essential deviations from the original plans.
255. In order to ensure UNDP's ultimate accountability for the project results, Project Board decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the Board, the final decision shall rest with the UNDP Project Manager.
256. Potential members of the Project Board are reviewed and recommended for approval during the PAC meeting. Representatives of other stakeholders can be included in the Board as appropriate. The Board contains three distinct roles, including: (1) **An Executive**: the individual representing the project ownership to chair the group, which will be the MEDD. (2) The **Senior Supplier**: individual or group representing the interests of the parties concerned which provide funding for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. In the case of this project this will be UNDP. (3) The **Senior Beneficiary**: individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. This is the Ministry of Economics and Finance, on behalf of the Government of Burkina Faso.

257. The **Project Assurance** role supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Project Manager and Project Assurance roles should never be held by the same individual for the same project. UNDP fulfills the Project Assurance role.
258. UNDP will monitor the project's implementation and achievement of the project outputs, and ensure the proper use of UNDP-GEF funds. Day-to-day operational oversight will be ensured by the UNDP Country Office (CO) for Burkina Faso, and strategic oversight by the UNDP/EEG Regional Technical Advisor (RTA) responsible for the project. The UNDP CO will be responsible for: (i) providing financial and audit services to the project; (ii) recruitment and contracting of project staff; (iii) overseeing financial expenditures against project budgets; (iv) appointment of independent financial auditors and evaluators; and (v) ensuring that all activities, including procurement and financial services, are carried out in strict compliance with UNDP-GEF procedures.

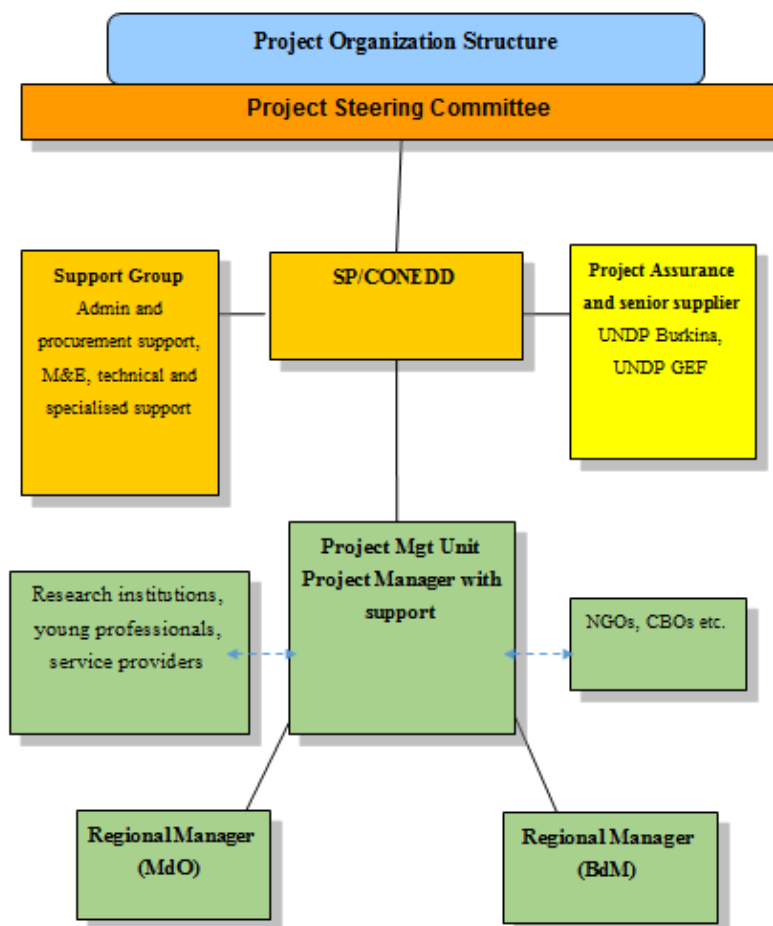


Figure 14: Project implementation organigram

259. Day-to-day management of the project will be undertaken by a National Project Manager (PM).

The PM will be located in SP-CONEDD, and UNDP will provide administrative and financial management support to the PM. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The Project Manager will liaise and work closely with all partner institutions to link the project with complementary regional and national programs and initiatives. The Project Manager will be recruited using the applicable procedures under NIM. The terms of reference for the PM and of other key project staff/consultants are detailed in Annex 7.

260. The National Project Management Unit (PMU) will also consist of staff and consultants:

- The Technical Jumelage Team, which includes a senior mentor, who will also serve as deputy to the PM, plus national and international young professionals within various expertise areas;
- An IT manager assigned to DCIME;
- An expert in communication;
- A procurement and accounting manager;
- A support staff as appropriate.

261. Under the supervision of the PSC, the PMU has the following main responsibilities:

- Coordination and management of the project and its two regional 'sub-projects';
- Developing work plans and consolidated annual budgets;
- Preparation of technical reports and periodic financial reports;
- Managing relationships with donors and project partners and monitoring the implementation of co-financing arrangements;
- Supporting the strategic partners of the PSC;
- Capacity building of stakeholders;
- Monitoring and evaluation of project activities;
- Policy analysis and development strategies in the light of the results of the project;
- The design and implementation of a communication strategy for the project; and
- Resource mobilization.

262. At the national level, the PMU interacts with the Government, UN agencies and other international development agencies interested donors, competent national institutions in the areas covered by the project and field partners (local authorities, NGOs, private sector, etc.). It reports to the Government, to UNDP, and other partners, using the governance channels established by the project. Specifically with regards to Component 1 of the project, the SICOFORMO system will benefit from the organizational framework of ONEDD anchored within the DCIME and the coordination unit PNGIM, responsible for coordinating the network of partners of ONEDD.

263. At the regional level, two local branches (or regional satellite offices) of the project will be installed in Gorom-Gorom and Dédougou. The Regional Managers will work under the supervision of the National Project Manager to achieve the objectives planned by the project in each area. They will manage resources accordingly the project using procedures specific to the project and the terms of any applicable partnership agreements. The Regional Managers will be housed within existing DREDD regional offices. For the particular case of the BdM which falls over two DREDD regions, the Regional Manager will be seated with the Boucle DREDD office but maintain close communication (e.g. copying any written exchanges within DREDD to) the Central-West DREDD office.

264. The regional satellite offices will each also be staffed by the project with:

- An expert in planning, monitoring and evaluation
- A minimum of support staff as appropriate.

265. At the technical level, regional satellites will meet with all stakeholders that are part of the devolved and decentralized operational relationships necessary to achieve the goals of the project in their respective areas. In this sense, it will be the face of the project at regional level. With all the local authorities involved in the implementation of field activities, memoranda of understanding will be developed to define the conditions of implementation of activities, roles and responsibilities within the project. The protocols will be countersigned by the DREDD acts as an institutional representative of MEDD. In this sense, the tools used by the CPP in Mouhoun can serve as inspiration.

266. A Project Steering Committee (PSC) will be constituted to serve as the project's coordination and decision-making body. The PSC will ensure that the project remains on course to deliver the desired outcomes of the required quality, and promotes the necessary synergies between the different components of the project with other Government initiatives, including programs funded by the GEF. The PSC will be chaired by Secretary General of MEDD (SG-MEDD), in its role as the project 'executive'. The role of the 'executive' is to ensure that the project is focused on achieving its outputs and that the project adopts a cost-conscious approach. The PSC provides policy, political and technical support to the project. As such, it ensures the consistency of the project objectives with national policies and initiatives, evaluates and approves work plans and budgets. The PSC will meet on a half-yearly basis to discuss work plans and annual budgets, evaluate on-going actions and validate the annual project reports being prepared. The members of this Committee are comprised of representatives of government departments and partners, including donors, interested and/or involved in the implementation of the project. The exact composition of the PSC will be proposed and approved by the Government and UNDP at project inception, with membership at a level of responsibility that encourages the necessary buy-in from the institution.

267. Indicatively, the Steering Committee will be composed of 20 representatives :

- The Ministry of Environment and Sustainable Development: 2 members
- Line ministries respectively responsible for agriculture, water, livestock, decentralization, finance and infrastructure: 1 member each.
- UNDP: 1 member
- Chairman of each Regional Council concerned by the project or its representative: 3 members
- The mayor of each commune affected by project activities or his representative: 8 members
- The representative of an NGO partner from each project area: 2 members

268. Project Management Unit provides the secretariat for the Steering Committee. The Project Manager and the two Regional Managers participate in meetings of the Steering Committee.

269. The Project Manager will prepare the Annual Work Plan (AWP) and Annual Budget Plan (ABP) each year for the project. The AWP and ABP will be approved by the PSC at the beginning of each year. These plans will provide the basis for allocating resources to planned activities. Once the PSC approves the AWP this will be sent to the UNDP Country Office and the UNDP Regional Technical Advisor for Biodiversity at the GEF Regional Coordinating Unit in Addis Ababa (Ethiopia) for clearance. Once the AWP and ABP is cleared by the Regional Coordinating Unit it will be sent to the UNDP/GEF Unit in New York for final approval and release of the funding, which will be channeled through the UNDP Country Office. The PM will, with the inputs of ICS, further produce quarterly operational reports and Annual Progress Reports (APR);

this will be combined with the PIR) for review by the PSC, or any other reports at the request of the PSC. These reports will summarize the progress made by the project versus the expected results, explain any significant variances, detail the necessary adjustments and be the main reporting mechanism for monitoring project activities. A calendar for the clearance and approval of work plans, requests for financial advances, financial reporting and technical reporting will be developed and agreed at the LPAC.

270. Regarding coordination with other initiatives, a number of other national institutions will play a pivotal role in the implementation project due to their mandate in the management of resources like water, land, forests, livestock, etc., alongside with NGOs, CSOs and other stakeholders, such as local authorities, community groups, CBOs, alongside producer associations, as they can bring the project's activities closer to immediate resource users. In this manner, herdsman/women, local leaders and existing community organizations, women's groups, producers and farmers' associations, will be engaged and strengthened in their capacity to implement climate change adaptation measures.
271. Stakeholders in the project are many and their role is thoroughly discussed in separate sections:
- National and local public institutions: ministries and their decentralized technical services, local authorities
 - Projects and programs and their funders
 - Civil society organizations and NGOs
 - Private actors (concession holders in Classified Forests)
 - Providers of data (national or international)
 - Beneficiaries of demonstration activities or capacity building
272. The participation of public institutions to the success of the project activities will be crucial at local level; in particular, (i) decentralized technical services departments whose work affects rural production, natural resource management and meteorological monitoring, and (ii) municipalities in whose territory the activities will be work. With each of these major groups, the project may establish appropriate collaboration agreements, enabling them to provide services and data and to provide the technical assistance necessary to achieve project goals. In particular, these protocols should be able to:
- Identify data and other services to be provided and their frequency (for climate data in particular);
 - Identify areas in which technical assistance is required for each and the expected levels of response;
 - Define specific roles at different levels and to mobilize human resources
 - Agree on outcomes and performance indicators or monitoring.
 - Define procedures for programming and monitoring and evaluation of agreed activities.
273. Regarding local authorities (Municipalities and Regions), their participation in the project occurs at two levels:
274. Participation in the implementation of activities for the conservation and protection of natural ecosystems and improving the resilience of riparian communities to climate change. At this level, the municipalities will be heavily involved in the prospect of increased responsibilities in decentralized forest management, in accordance with MEDD approved policy options. In this regard, MOUs signed should focus on the role of municipalities in social mobilization of beneficiary communities but especially in the monitoring of commitments made by them (using the CPP Mouhoun agreements as a reference).
275. Mainstreaming climate change considerations into local development. Here, the project, in close coordination with the COGEL project in particular, will support and expand the municipalities covered by its own activities, furthering the review process initiated by COGEL. The EBA Project is expected to develop and implement a targeted training program, designed for the relevant actors in municipalities and regions, to enable

276. There are many projects and initiatives providing co-financing to this project, forming a solid funding base on which the GEF investment can be built. Mechanisms of participation of these projects and programs will be specified at the inception stage through discussions conducted by the Project Manager or Regional Managers. At the local level, the project will actively develop or participate in mechanisms and frameworks for coordination of initiatives in sustainable management of natural resources. In these frameworks, it will encourage any process whereby (as above, in the image of what was initiated by the CPP in Mouhoun) multi-year planning tools can be used, and informed by all the actors in the sustainable management of natural resources. To facilitate the implementation of such tools, the National Project Manager will work to make the donors of these programs and projects sensitive to shared benefited ensuing, in order to obtain their membership or participation in monitoring and evaluation of such tools.
277. Regarding CSOs and NGOs, it is in the interest of the project objectives to ensure a continued partnership between the project and already-active NGOs and CSOs in the two areas where the project will operate. In the case of MdO in particular, the participation of some CSOs will be most beneficial especially at the municipal level. In the MdO, NATURAMA and AGED are active and among the actors who can support the development and implementation of local charter for the management of water resources and pasture during the dry season. This process is expected to be entrusted to an NGO on the basis of a selection based on ability and experience with similar work. An agreement or contract will be established between the project and the NGO for the purposes of this work. Also in MdO, other NGOs may have specific skills and experiences with which the project will sign an MoU in order to benefit mutually. For Bdm, OCADES, which implements the PRCC, is a co-financing partner. CSOs may be engaged as service provider in implementing several aspects of the project, as long as UNDP rules and procedures are respected.
278. The private sector and other various organizations will provide technical assistance, data and implementation services on contractual basis. Collaborators will be selected through applicable procurement processes.
279. In the particular case of Kalio CF (described in section 1.5), a MoU will be formed directly between the PMU and concessionaire of the hunting area. It will incorporate (i) the aggregate of the investments planned by the concessionaire, and (ii) support or demonstration activities planned in the project, but also (iii) all the support of the State including technical assistance e.g. from OFINAP, and (iv) actions under the PCD of Zamo village in riparian areas of the Classified Forest. As such, this protocol must be initiated by all parties and signed at a high level of responsibility to effectively engage these parties.
280. Village communities will participate in the implementation of demonstration activities or support to particularly increase their resilience to the effects of variability and climate change. One of the conditions of participation is the ability of their actions to generate goods, services and income that would allow them to (i) improve the quality of their relationships with threatened ecosystems, (ii) improve the quality of their daily existence, and (iii) strengthen their capacity to better fulfill the potential consequences of climate-induced natural disasters. During the public consultations, it was given to see that relations are generally good between these communities and decentralized technical services that assist them, particularly with departmental environment and sustainable development (DREDD). The quality of these relationships appears as an asset in the context of advocacy, animation and even courses that will necessarily anticipate or accompany the demonstration measures or investments to be implemented with the participation of these communities.

281. Procurement: A cursory analysis of the project's budget indicates that at least half of the LDCF funds will require relatively complex procurement processes.⁹³ The PM will work together directly with the Senior Mentor (for the *Jumelage* Team) and the Procurement & Accounting Manager for preparing and exercising quality control on all of the procurement and partnership documentation required under the project and also and exercising quality control on them. This will encompass, including, and in particular, technical and operational specifications for services and goods to be procured, development of selection criteria and adherence to procedures in all stages of the procurement process. The team may resort to specialized support from lawyers, economists and engineers e.g. on a need basis; short-term contracts may be drawn to obtain this support. Various contracting and partnership engagement modalities are foreseen under different project outputs and indicative budget allocations are also reserved for the purpose. Each year, a procurement plan will be prepared and appended to the project's annual workplan.

282. Women are known to play an active and leading role natural resource management such as:

- For MdO, breeding and marketing of by-products, marketing of garden products and crafts although for crafts, wetlands ponds no longer provide the necessary raw materials; and
- For the BdM, processing and marketing of non-timber forest products constitute investment (human and financial) of women and their activity in this area of the project's emphasis is almost exclusive.

283. In both cases, women play an important role in household food security. They are in most cases already organized around these activities and have the necessary motivation for the adoption of measures to be proposed by the project. That is why the proposed activities in the two project areas include strong measures to improve the participation of women in general and particularly those that would enable them to improve the performance of these activities, while helping to give more value to goods and services derived from ecosystems. Furthermore, men can migrate seasonally for wage-based employment, therefore emphasis on women ensures project continuity.

- Implementation of project activities, working closely with stakeholders, will draw on established good practice particularly for community participation. Different approaches with communities that involve these technical services have been developed by public bodies and NGOs in the context of development projects in progress and sharing the same goals as this project, involving implementation tools that could serve inspiration. These approaches and tools will in all cases seek to:
- Understand the rationale for household and community participation in the project, and aim to return benefits over and above their investment in the project;
- Motivate the community contribution to the action, including with regard to the enjoyment of goods and services that will result;
- Clearly locate responsibility in the communities for the maintenance and security of investments, using their existing organizations in the project;
- Create the conditions and put in place the mechanisms and approaches for scaling results and sustainability of the achievements of these investments.

284. Using such an approach, the project should keep in mind the need to adapt the strategic options and forms of support or motivation in the choice of communities, including combining the means of reconciling the common interest and effectiveness related to individual accountability.

⁹³ This pertains in particular to the following budget lines, which currently compose >50% of the Total Budget and Workplan: 72100 Contractual Services-Companies; 72200 Equipment and Furniture; 72300 Materials & Goods; 72500 Supplies; and 72600 Grants.

6 Monitoring Framework and Evaluation

285. Given that the project is very innovative in approach, its monitoring and evaluation deserve special attention and consideration. Travers et al (*in press*) indicate that while EBA is gaining increased attention; there is limited evidence to guide users in the selection of the most appropriate options for their context. Consequently, while the evidence base is developed, it is vital that a learning-by-doing approach is adopted. This approach advocates for constant reflection on EBA initiatives to inform change of course both during project implementation and also to continue to collect lessons post implementation that will facilitate longer-term adaptive management. Principles for monitoring EBA projects that are currently in development (e.g. by the UNEP-UNDP-IUCN EBA Flagship) will be taken on board as they are available.

286. The project will be monitored through the following M&E activities. The M&E budget is provided in the table below. The M&E framework set out in the Project Results Framework (Part 3 of this project document) is aligned with the AMAT and UNDP's M&E frameworks.

287. **Project start:** A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and program advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan. The **Inception Workshop** should address a number of key issues including:

- Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and Regional Coordinating Unit (RCU) staff (i.e. UNDP-GEF Regional Technical Advisor) vis-à-vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
- Based on the project results framework and the LDCF related AMAT set out in the Project Results Framework (Part 3 of this project document), and finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Plan and schedule Steering Committee meetings. Roles and responsibilities of all project organization structures should be clarified and meetings planned. The first Steering Committee meeting should be held within the first 12 months following the inception workshop.

An **Inception Workshop report** is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

288. Quarterly:

- Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS.
- Risks become critical when the impact and probability are high. Note that for UNDP/GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).

- Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.
- Other ATLAS logs will be used to monitor issues, lessons learned. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

289. **Annually:** Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR

290. **Periodic Monitoring** through site visits: UNDP CO and the UNDP-GEF region-based staff will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

291. **Mid-term of project cycle:** The project will undergo an independent Mid-Term Review at the mid-point of project implementation (expected to be in July 2017). The Mid-Term Review will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term review will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term review will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit (RCU) and UNDP-GEF. The LD/FC/SCCF AMAT as set out in the Project Results Framework (Part 3 of this project document) will also be completed during the mid-term evaluation cycle.

292. **End of Project:** An independent Terminal Evaluation will take place three months prior to the final PB meeting and will be undertaken in accordance with UNDP-GEF guidance. The terminal evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term review, if any such correction took place). The terminal evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The LD/FC/SCCF AMAT as set out in the Project Results Framework in Section III of this project document) will also be completed during the terminal evaluation cycle. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response, which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

293. **Learning and knowledge sharing:** Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.
294. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.
295. There will be a two-way flow of information between this project and other projects of a similar focus.
296. **Audit:** This project will be audited in accordance with UNDP Financial Regulations and Rules and applicable audit policies.

Table 7: Project Monitoring and Evaluation workplan and budget

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Inception Workshop and Report	Project Manager PIU (Project Implementation Unit) UNDP CO, UNDP GEF	Indicative cost: \$20,000	Within first two months of project start up with the full team on board
Measurement of Means of Verification of project results.	UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. PIU, esp. M&E expert	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on output and implementation	Oversight by Project Manager PIU, esp. M&E expert Implementation teams	To be determined as part of the Annual Work Plan's preparation. Indicative cost is \$50,000	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	Project manager PIU UNDP CO UNDP RTA UNDP EEG	None	Annually
Periodic status/ progress reports	Project manager and team	None	Quarterly
Mid-term Review	Project manager PIU UNDP CO UNDP RCU External Consultants (i.e. evaluation team)	Indicative cost: \$44,000	At the mid-point of project implementation.

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Terminal Evaluation	Project manager PIU UNDP CO UNDP RCU External Consultants (i.e. evaluation team)	Indicative cost : \$44,000	At least three months before the end of project implementation
Audit	UNDP CO Project manager PIU	Indicative cost per year: \$3,000 (\$18,000 total)	Yearly
Visits to field sites	UNDP CO UNDP RCU (as appropriate) Government representatives	For GEF supported projects, paid from IA fees and operational budget	Yearly for UNDP CO, as required by UNDP RCU
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 172,000 (+/- 2.5% of total LDCF budget)	

7 Legal Context

297. This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA and all CPAP provisions apply to this document.
298. Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.
- The implementing partner shall:
- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
 - b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.
- UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.
299. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

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9 Annexes

Annex 1. Barrier Matrix

THREAT / IMPACT	ROOT CAUSES	MANAGEMENT CHALLENGE
<p>Key Barrier 1) Limited application of climate risk knowledge to decision making at regional and local levels (with a focus on BdM and MdO) <i>Limited scientific and management capacities and a general lack of knowledge of climate-related issues</i> <i>Difficulty to react to uncertainty of climate risk</i> <i>Existing knowledge products do not include sound analysis and are not reaching relevant stakeholders</i></p>		
<ul style="list-style-type: none"> • Despite good advancements of national level decision making support tools and knowledge systems related to climate change, limited climate resilience in regional and local level planning and decision making 	<ul style="list-style-type: none"> • Low investments into making climate risk related information available and applying it at regional and local levels • Currently existing national systems (i.e. ONEDD) do not yet integrate sufficient geo-based agro-ecological and hydrological information for climate resilient decision-making • Limited investments into local level tracking of natural resources related dynamics and relevant processes such as climate risk impacts on sectors related to local livelihoods (e.g. water, health, agriculture, other) • Inadequate investments into regional and local level capacity development for climate resilient information and decision making systems • Low literacy rate throughout country and especially in rural areas especially impacting on the type of knowledge products that can be effective • Limited understanding of magnitude of climate related risks at all levels of decision making and politics in Burkina Faso 	<ul style="list-style-type: none"> • Limited scientific and management capacities and a general lack of knowledge of climate-related issues at local, regional and national levels • Knowledge and understanding of climate variability and change-induced risks esp. related to agro-ecological and hydrological systems nationally but especially in the project targeted areas remain limited • The vulnerability of key agro-ecological and hydrological systems of the BdM and MdO is only partially known and no relevant tracking systems are in place to generate relevant research information • Decision makers at sub-national level do not integrate climate risks into project planning and execution (incl. cooperation partners) • Existing knowledge products stemming from national information systems are not end-user driven and consequently are not reaching relevant stakeholders • Lack of coordination between existing cooperation support to Burkina Faso, leading to development of parallel information systems • Climate change risk, vulnerabilities and resilience are not sufficiently mainstreamed into local and regional development planning and finance to guide on-the-ground development
<p>Barrier Removal Strategy 1)</p> <ul style="list-style-type: none"> ▪ Strengthen capacity of DCIME to refine established information system (i.e. ONEDD) and improve information inputs, noting that substantial investments have already been made, and are expected to be made, through other projects (including the recently approved GEF CBD2 project). ▪ Position DCIME to coordinate existing and newly emerging information systems supported by various cooperation partners and sectors (incl. ensuring compatibility with other management systems such as SNIEAU (DANIDA-supported national water information system)) ▪ Develop and implement capacity development plan with regional (Ouagadougou, Dori and Dédougou) and local level (BdM and MdO) for decentralized application and operationalization of information system 		

THREAT / IMPACT	ROOT CAUSES	MANAGEMENT CHALLENGE
<ul style="list-style-type: none"> ▪ Set up local resource tracking systems to increase knowledge and understanding of climate variability and change-induced risks in the project targeted areas related to a customized geo-based agro-ecological and hydrological information system ▪ Update risk and vulnerability assessments for the BdM Forest Corridor and MdO Wetlands Basin ▪ Undertake stakeholder information needs assessment and scope relevant designs of knowledge products to be generated from the geo-based agro-ecological and hydrological information system so that they will be actively used by regional planners, local commune leaders and local resource managers for NRM planning and budgeting and for guiding the sighting and planning of adaptation activities in Component 2; complement knowledge products with relevant guidance and lessons learnt stemming from the demonstration projects in Component 2 		
<p>Key Barrier 2) <i>Lack of on the ground demonstrations of EBA potential</i> <i>Knowledge and understanding of climate variability and change-induced risks in the project targeted areas remain limited</i> <i>The vulnerability of key agro-ecological and hydrological systems of the BdM and MdO is only partially known and not adequately addressed by the various development interventions in the project zone</i></p>		
<ul style="list-style-type: none"> • Promotion of maladaptive practices • Collapse of BdM and MdO ecosystems and destruction/ loss of critical ecosystem services • Increasing water limitations in already water constrained ecosystem (MdO) • Increasing vulnerability of local communities to CC and other risks • Severe negative socio-economic impacts <p>BdM: <i>Destruction of forest reserves around Mouboun river negatively affects water resource</i> <i>Upstream utilization of water impacts on down river dynamics</i> <i>Destitute local communities have no choice but to encroach on forest reserve – use of wood e.g. for building materials and charcoal, herding of livestock to river for watering – causing severe soil erosion, overutilization of any timber or non-timber resource to supplement poor agricultural outcomes, and uncontrolled unwanted ignition and partially application of fire.</i></p> <p>MdO: <i>The inland delta and ephemeral river system of the MdO system is disturbed, threatening the existence of this critical water body in the Sabel region of Burkina Faso</i> <i>Often the only water and food (fish, water birds, irrigation) source for local communities in the</i></p>	<ul style="list-style-type: none"> • Limited understanding of magnitude of climate related risks at all levels of decision making and politics in Burkina Faso • Limited understanding of resource dynamics (natural and social assets) and additional climate change risks esp. in target areas • Limited investments into local development and lack of understanding of climate resilient/ sustainable development options • People live in already marginal areas with clear resource related limitations – lack of alternatives • Local communities are critically dependent on local natural resources and overstretch the utilization of e.g. a limited water resource (i.e. MdO) • Local people, but also extension officers and local decision-makers, are not aware of resource management alternatives and generally lack the ability to improve their livelihoods through alternatives (e.g. improved agricultural production, range management options, other) • Established traditional and cultural systems stand in the way of innovation – and motivation • Gender dimensions are diverse and require special attention • Transhumance – in the case of MdO through (seasonal) incoming livestock herders, but also refugees affected by instabilities in Mali and in the case of BdM through intense (seasonal) migration for work (e.g. to Ivory Coast for work in plantations) affect resource management and social systems 	<ul style="list-style-type: none"> • Lack of engagement with local communities and resource managers in problem identification and solution finding related to improved ecosystem management for building climate resilience • Lack of awareness of composite impacts that poor land and resource management have on local livelihoods • Ineffective natural resource governance and control systems • Poor understanding of incentive systems and limited innovations in establishing and utilizing such systems • Limited understanding of climate change risks and impacts on natural and social assets • Absence of successful demonstrations, but also resistance to up-scaling visibly positive innovations (at Oursi a great deal of reasonable “old” development interventions are not being maintained or replicated) • Complicated social systems, including traditional communities that do not fully integrate culturally appropriate engendered approaches, including through targeted women empowerment, as well as being cognizant of the dynamics of (seasonal) migration on household composition and available work force

THREAT / IMPACT	ROOT CAUSES	MANAGEMENT CHALLENGE
<p><i>area, the MdO ecosystem is threatened by climate risks compounded by overutilization and poor management of the natural assets. Changed flow regimes due to changes in rainfall and runoff, as well as human induced additional negative impacts e.g. siltation through soil erosion due to deforestation, sand mining, livestock trampling impacts around lake border, and overuse of water for livestock and human consumption, partially related to transhumance, threaten to dry up the lake.</i></p>		
<p>Barrier Removal Strategy 2)</p> <ul style="list-style-type: none"> • Set up appropriate project implementation arrangements, with clear presence at BdM and MdO pilot sites • Establish and operationalize appropriate local level participatory platforms for project execution, specifically considering gender dimensions • Use “farmers schools” approach to demonstrations, actively involving and putting into the drivers’ seat local communities and enabling them to work effectively with regional extension personnel from various sectoral ministries • Together with local communities develop local adaptation plans that are responsive to local needs and dominant climate risks, with the following key interventions areas identified during initial consultations <p>BdM:</p> <p><i>Natural assets:</i></p> <ul style="list-style-type: none"> • Flood and erosion control is ensured through a “surgical” and climate anticipatory approach, by establishing flood tolerant and erosion resistant grassed and herbaceous swales⁹⁴, building check dams at critical points of the BdM Forest Corridor with community participation and enriching riparian forests with multi-use, climate resilient tree and herbaceous species -- this will contribute to the effective protection of riverbanks (as a complement to other proposed infrastructural solutions upriver), decrease soil transpiration and topsoil loss, it will allow the conveyance of storm water at a slower, controlled rate, reducing siltation levels in the water course and significantly improving infiltration and percolation, while also providing other agro-ecological and hydrological benefits to riverine communities facing an increasingly variable climate. • Improved livestock movement plans and water regimes, e.g. through creating specific corridors and water access at managed water points reduce pressure along the river sites from trampling • Gazetted forests in the BdM will be protected against climate induced bushfire, as appropriate: (i) protocols developed for managing climate-driven risks of increased incidence and intensity of bushfires fires in the BdM Forest Corridor; and (ii) demo fire-breaks are built by the project around some 73,000 ha of forests⁹⁵, using a cost-effective and sustainable method with the involvement of riparian communities. <p><i>Social assets:</i></p> <ul style="list-style-type: none"> • Polyculture and adaptive agro-ecological production systems in communal lands (at least 400 ha) are demonstrated at project sites (e.g. building on the lessons from first NAPA follow up project for Burkina Faso and during the PPG phase locally identified priorities – see Annex 3) as a means to strengthen vulnerable livelihoods and cope with additional 		

⁹⁴ A grassed and herbaceous swale is a graded and engineered landscape feature (varying 200m to 1km in width) and appearing a shallow open-channel drainage-way stabilized with grass or other herbaceous vegetation. Swales in project sites will be vegetated with flood tolerant, erosion resistant plants. Besides controlling flood and storm water, and improving the base flow in the immediate area of an adjacent water body (e.g. a stream or a river), a swale can also act as a filter medium removing pollutants.

⁹⁵ The proposal is to include the gazetted forests of Tiogo, Tisse and Kalio, though the final choice remains to be confirmed at PPG phase through a feasibility study. Hence, the hectareage may change at CEO Endorsement stage.

THREAT / IMPACT	ROOT CAUSES	MANAGEMENT CHALLENGE
<p>climate risks by diversifying income sources and producing food, fuel-wood, fiber and other goods more sustainably for local consumption.</p> <ul style="list-style-type: none"> Specifically understand incentive systems around resources governance e.g. to address issues around charcoal production and other unsustainable uses of timber and non-timber products from the forest reserves Local commune leaders and resource users (e.g. farmers, freshwater fishermen and -women, livestock herders, foresters, rural women's groups and others) are trained in climate adaptive and anticipatory management of natural and social assets to support implementation of the remainder Outputs in Component 2 and with focus on the diversity of services rendered by sustainable agro-ecological and hydrological systems and their role in local livelihoods. The development and later application of relevant knowledge products foreseen under Component 1 will be informed by local level user needs stemming from Component 2 activities. 		
<p>MdO:</p> <p><i>Natural assets</i></p> <ul style="list-style-type: none"> Critical wetland areas, covering some 1,600 ha of ephemeral rivers and lakes in the MdO Wetlands Basin, and which support 24,000 livelihoods, become more resilient to desiccation through improved management of water usage and soil erosion (e.g. trampling by livestock), and the replanting and protection of indigenous grasses and herbaceous vegetation resilient to significant climatic variance; measures that promote infiltration, decrease soil transpiration and make more palatable grasses and water available to livestock during the dry season. Through trampling mobilized dune systems will be stabilized where necessary – due to the trampling impacts of livestock ancient stable dune systems have been loosed in recent years, leading to an accelerated encroachment of such dunes on the lake and adjacent settlements in recent years Wetland associated resources such as fish and wild birds, are better managed, monitored and use controlled, to maintain important natural assets, whilst such measures are supplemented through polyculture approaches (see below) Critical water shortages observed in all communities situated in the MdO basin are being addressed in a comprehensive and well managed manner (linked to component 3); best available hydro-(geo-)logical information will be applied to the sighting of possible boreholes and their development; relevant water management plans will be developed by the local communities in the light of long-term sustainability of the water resource esp. in a climate change context Transhumance pressures (esp. on grazing and water, but also other natural assets such as wood, fish, birds) are being better managed through agreed access control plans and rules and their application; relevant local measures are supplemented by a sub-national and regional approach to better managing transhumance needs (see component 3 – possible additional water sources) Through locally decided and enforced by-laws, an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin, aimed at avoiding overstocking during the dry season, is implemented with the support from sedentary communities and transhumant groups. <p><i>Social assets:</i></p> <ul style="list-style-type: none"> Similarly to BdM, polyculture and adaptive agro-ecological production systems are demonstrated, however, due to the naturally arid climates prevailing in the MdO area locally adapted systems will be specifically promoted. Being a livestock dominated production system, interventions will focus on improving livestock production through animal health and husbandry innovations; rainfed and partially irrigated vegetable gardens established at the margins of the lake will be improved through promoting climate resilient varieties that at the same time are of high nutritional value. Possible irrigation improvements will be considered. Better management of food options will be a focus of the intervention – with lake fish and water birds potentially being replaced by farmed alternatives. Traditional systems will be explored to identify whether specifically developed local practices are particularly relevant or developing adaptation options. As at BdM local commune leaders and resource users (e.g. farmers, freshwater fishermen and -women, livestock herders, foresters, rural women's groups and others) are trained in climate adaptive and anticipatory management of natural and social assets to support implementation of the remainder Outputs in Component 2 and with focus on the diversity of services rendered by sustainable agro-ecological and hydrological systems and their role in local livelihoods. The development and later application of relevant knowledge products foreseen under Component 1 will be informed by local level user needs stemming from Component 2 activities. 		

THREAT / IMPACT	ROOT CAUSES	MANAGEMENT CHALLENGE
<p>Key Barrier 3) Incipient mainstreaming of CC resilience into key policy and planning processes <i>Climate change risk, vulnerabilities and resilience are not sufficiently mainstreamed into local and regional development planning and finance to guide on-the-ground development</i></p>		
<ul style="list-style-type: none"> • Limited mainstreaming of adaptation practices and climate risk analyses amongst critical policy instruments • Limited understanding of adaptation concepts • Sectoral priorities are still not taking climate change into consideration to a sufficient extent of considering the risks and that it poses and adjusting policies • Budgetary planning does allocate sufficient resources to incorporating climate change into its processes • Poorly developed resource use management plans reinforce maladaptive measures e.g. in terms of unsustainable water and pasture usage, biomass appropriation, land use. 	<ul style="list-style-type: none"> • Limited understanding of magnitude of climate related risks, in particular mid and long term impact, at all levels of decision making and politics in Burkina Faso • Limited opportunities for sub-national decision makers and planners to address climate risk in their programs of work • Low investments into making climate risk related information available and applying it at regional and local levels • Insufficient investments into regional and local level capacity development for climate resilient information and decision-making systems – the bulk of investments are at the central level. • Resistance to learn from local level demonstration and to uptake learning into improved decision making • Persistent work in sectoral silos, hindering collaborations 	<ul style="list-style-type: none"> • Limited scientific and management capacities and a general lack of knowledge of climate-related issues at local, regional and national levels • Knowledge and understanding of climate variability and change-induced risks esp. related to agro-ecological and hydrological systems nationally but especially in the project targeted areas remain limited • The vulnerability of key agro-ecological and hydrological systems of the BdM and MdO is only partially known and no relevant tracking systems are in place to generate relevant research information • Decision makers at sub-national level do not integrate climate risks into project planning and execution (incl. cooperation partners) • Existing knowledge products stemming from national information systems are not end-user driven and consequently are not reaching relevant stakeholders • Lack of coordination between existing cooperation support to Burkina Faso, leading to development of parallel processes and systems • Climate change risk, vulnerabilities and resilience are not sufficiently mainstreamed into local and regional development planning and finance to guide on-the-ground development • Planning processes often top-down and not informed by on the ground realities • Limited tools and approaches that allow for systematic sharing of lessons learnt and potential adaptation options amongst decision makers and local communities
<p>Barrier Removal Strategy 3)</p> <ul style="list-style-type: none"> ▪ Identify key policy opportunities for project interventions and integration of lessons learnt beyond the opportunities identified during the PPG ▪ Develop clear policy influencing strategies for all selected/prioritized instruments to be achieved during project horizon and integrate them into project plans ▪ Facilitate integration of climate risk management and climate resilient landscape management into the management (or master) plans for the BdM and MdO through the natural resource management options demonstrated (including wetland restoration, bushfire prevention, natural storm water control, natural increased infiltration measures etc.) ▪ Facilitate that the climate resilient polyculture model tested through Component 2 is incorporated into relevant forestry, agricultural and livestock management strategies, plans and investments for the BdM Forest Corridor and the MdO Wetlands Basin. ▪ Through learning, sharing, partnerships and wide collaboration frameworks, the project and ongoing rural development programs and related initiatives in the MdO Wetlands Basin and the BdM Forest Corridor address climate change concerns and options in their planning and implementation ▪ Guide climate resilient and evidence-based regional and sub-national planning of transhumance incl. the possibility of developing additional water resources through establishing dams elsewhere in the MdO basin 		

THREAT / IMPACT	ROOT CAUSES	MANAGEMENT CHALLENGE
<ul style="list-style-type: none"> ▪ Develop relevant knowledge products and training approaches and materials for decision makers and planners so that valuable lessons learnt from this project will be internalized and applied in project areas and beyond ▪ Formalize integration of local and regional experience into national level policy processes and learning 		

Annex 2: Risk Analysis

#	Description	Date Identified	Type	Impact, Probability and Risk Assessment	Countermeasures / Management response
1	Security and instability at the MdO project site, adjacent to rebel-held area of Mali.	October 2013 (during PPG studies)	Operational (sub-type Security)	I = High P = Mod. Likely Risk = Medium	Proceed with the project as planned, utilizing security convoys for international visitors as required. Else, the project will follow appropriate instructions and applicable protocols from the UN Department of Safety and Security (UNDSS). All project staff will undergo training in security in the field. Prior to any deployment, project staff, consultants and collaborators will apply for security clearance according to UNDSS procedures.
2	The Mouhoun River continues to be heavily used upstream and there are now plans to build more dams to increase electricity production and expand irrigation in the basin. If unmitigated, the negative impacts of these infrastructural works could significantly decrease the positive impacts of EBA efforts.	October 2013 (PPG studies)	Environmental	I = Medium P = Likely Risk = Medium	The project will engage early with the Volta Basin Authority (VBA) on raising their awareness on the possible negative impacts of planned works. It will in particular make sure that climate change impacts are duly introduced into the overall impacts assessments, by providing data and access to the maps and products from SICOFORMO. This is will provide VBA a sounder basis for decision-making about water use in the basin and for evaluating options and alternatives, including EBA. It is possible that some of the planned works may be risky, expensive or even unfeasible, and that VBA would instead support an EBA approach in certain cases.
3	Local communities and relevant groups of stakeholders (e.g. municipal authorities, community groups, NGOs, public entities) are not receptive to changing traditional practices that threaten the provision of agro-ecological and hydrological services and persist in using unsustainable methods.	At PIF stage	Strategic	I = High P = Mod. Likely Risk = Medium (unchanged since PIF stage, but response improved)	The project will set up appropriate project implementation arrangements, with clear presence at BdM and MdO pilot sites (Activity 2.1.1). This will include the establishment and operationalization of appropriate local level participatory platforms for project execution, specifically considering gender dimensions. As a principle for community interaction a “farmers schools” approach to demonstrations will be applied, actively involving and putting into the drivers’ seat local communities and making them work together with regional extension personnel from various sectoral ministries. In the MdO, the project will support development of a plan to avoid overgrazing and overstocking during the dry season by regulating access to

#	Description	Date Identified	Type	Impact, Probability and Risk Assessment	Countermeasures / Management response
					water and pasture resources. Yet, the plan would not be enforceable, if it is not collectively agreed upon with local sedentary communities and transhumant groups. The project will competitively select and engage a capable national CSO to work with local communities and transhumant groups in the MdO Wetlands Basin. The CSO's role will be to facilitate the preparation and negotiation of the plan, until it becomes a by-law agreed upon by concerned resource users.
4	Land use and tenure conflicts and conflicts among different interest groups (hunters, ranchers, transhumants, fuel wood collectors, etc.) may exacerbate current threat driven pressures on natural assets (e.g. demand for farm land, brush fires, grazing and fuel wood collection, etc.).	At PIF stage	Organizational	I = Medium P = Mod. Likely Risk = Medium (unchanged since PIF stage)	It is assumed that baseline projects will, by and large, be dealing with current levels of pressure on agro-ecological and hydrological systems. Yet, these pressures may be exacerbated, including as a result of measures that this LDCF may attempt to introduce, e.g. to avoid overstocking or overgrazing, or to regulate the excessive extraction of forest wood, water abstraction etc. First, the project will deal with this risk, first by collaborating closely with other relevant initiatives (including baseline and co-financing), so that non-climatic stressors (e.g. overutilization of natural assets) are being minimally controlled. Secondly, the project will also introduce conflict resolution measures as part of the community consultation mechanisms to be established for participatory management of natural and social assets. The underlying agenda is to pre-empt conflict that could otherwise undermine project success and work towards consensus. A careful analysis of the stakes and of stakeholders with respect to long and short term benefits of different models of resource use and their implications for the provision of agro-ecological and hydrological services will be part of the project strategy.
5	Conflict in Kalio CF: Local communities strongly disapprove of the boundaries of this new conservation area, which has restricted their agricultural and pastoral activities. They might	PPG - GRN report (Hien 2013) and consultation reports	Political	I = Low P = Mod. Likely Risk = Low	An MoU will be developed with the concessionaires to engage with the project; some initial assessment will help to clarify the causes of the conflict and possible measures in response. Indicatively, special measures could include establishing better information on the zoning of the areas, determining what remediation measures should be put in place, considering the

#	Description	Date Identified	Type	Impact, Probability and Risk Assessment	Countermeasures / Management response
	not wish to collaborate with the project.				value of various land uses, etc. This should be conducted in line with internationally established good practice as well as UNDP normal policies.
6	Challenges (e.g. organization, capacity - e.g. 90% illiteracy amongst local officials) at the community level to sustainably manage the investment and results.	PPG - Traore 2013	Strategic	I = High P = Likely Risk = High	The project will work to build capacity at local level, including via the process of developing local adaptation plans. Capacity building through awareness-raising, training on climate change, their impacts and possible adaptation options, and close assistance to impulse climate resilient management at the community level is necessary. Project initiatives will be implemented through a close collaboration with local authorities and technical partners such as local civil society organizations. These technical partners will be key vehicles to test and validate pilot adaptation options as well as to disseminate best practices widely. Considerable effort must be invested into the proper design on knowledge products to ensure that they will in fact be useful and be applied.
7	Challenges of communication especially as required for behavior change. In the area of the MdO particular, these activities are critical to project success.	PPG - Kabore 2013	Strategic	I = Low P = Mod. Likely Risk = Low	The project will develop, implement and maintain a communications strategy to ensure that all stakeholders are informed on an on-going basis about the project's objectives and activities; overall project progress; and the opportunities for involvement in various aspects of the project's implementation. The project is looking for innovative and locally suitable communication channels to disseminate information esp. as related to behavior change, e.g. the existing daily radio shows on environmental affairs.
8	<u>Issue 1:</u> The geo-based climatic, agro-ecological and hydrological information system may not be sustained beyond the lifetime of the project.	At PIF stage	Financial	I = Low P = Unlikely Risk = Negligible (downgraded since PIF stage; no longer	<u>Note:</u> This is no longer considered a risk but will be monitored during project implementation as an issue. The downgrading is thus justified: Establishing the SICOFORMO within the ONEDD system means that over-arching maintenance will continue beyond the lifetime of the project. ONEDD management and the project will need to identify and draw in co-financing partners to

#	Description	Date Identified	Type	Impact, Probability and Risk Assessment	Countermeasures / Management response
				considered a risk, but an issue)	continue the highest level of granularity of the system beyond the project and/or draw in local government actors as funding partners.
9	<p><u>Issue 2:</u> The evolution of climate variables in areas with will create additional challenges:</p> <ul style="list-style-type: none"> - Drought, poor rains and locust invasion in MdO causing a catastrophic food situation , a strong transhumance and a significant migration of able-bodied to invest in labor-intensive work - Flooding, poor distribution of rainfall or high levels of parasitism also leading to a situation of serious food shortages. 	PPG _ Kabore 2013	Environmental	<p>I = Low P = Unlikely Risk = Negligible (not considered a risk, but an issue)</p>	<p><u>Note:</u> To be monitored during project implementation as an issue.</p> <p>The challenges are there but are not exactly additional and may not be felt during the project lifespan. To address the issue, the early warning of food security system set up by the Government and its technical partners should be functional and serve to put in place food security safety nets. Also requires managing the project successfully through conditions of uncertainty and change</p>
Summary		7 risks	Environmental = 1 Financial = 0 Operational = 1 Organizational = 1 Political = 1 Regulatory = 0 Strategic = 3 Other = 0	Critical = 0 High = 1 Medium = 4 Low = 2	Overall assessment of risk level = Moderate
		2 issues	Environmental = 1 Financial = 1	-	

Table 8: Risk Assessment Matrix

Risk Typology:						
	<ul style="list-style-type: none"> • Environmental • Financial • Operational 	<ul style="list-style-type: none"> • Organizational • Political • Regulatory 	<ul style="list-style-type: none"> • Strategic • Other 			
Impact						
Probability		CRITICAL	HIGH	MEDIUM	LOW	NEGLIGIBLE
	CERTAIN / IMMINENT	Critical	Critical	High	Medium	Low
	VERY LIKELY	Critical	High	High	Medium	Low
	LIKELY	High	High	Medium	Low	Negligible
	MODERATELY LIKELY	Medium	Medium	Low	Low	Negligible
	UNLIKELY	Low	Low	Negligible	Negligible	Considered to pose no determinable risk

Annex 3: Summary of communities “wish-list” of activities for Component 2

The two tables that follow below shows indicative priorities identified during the consultations with local communities in the two project sites – the Boucle du Mouhoun Forest Corridor (BdM) and the Mare d’Oursi Wetlands Basin (MdO). They provide a first cut list of activities, as they have been prioritized by interviewed community members in both sites.

A compilation and refining of the list gave rise to the initial priority setting and development of activities under Component 2. During the project inception, these will be further refined and carefully planned, as it is foreseen in Output 2.1.

Table 9: Proposed activities from initial consultations in BdM

Site	Relevant villages	Considerations on the proposed activities	Activities proposed from communities “wish-list”
Mouhoun-Sourou confluence	Sono ; Magnimasso; Taré.	<ul style="list-style-type: none"> ▪ Agricultural occupation is carried out with considerable clearing of vegetation around the riverbanks ▪ Communities have generally limited access to extension services and improved seeds 	<ul style="list-style-type: none"> ▪ River bank protection and the restoration of the legal protection strip of 100 m (80 ha) ▪ Agroforestry (yielding fruit, wood and other NTFP) ▪ Improved agricultural practices that make efficient use of water resources
Kari-Ouoro CFs	Banouba	<ul style="list-style-type: none"> ▪ Classified Forests (CF) are under weak supervision; local actors are poorly organized for promoting participatory (or co-) management of State forests ▪ Uncontrolled bushfires ▪ Limited or no agricultural footprint ▪ The village conducts multi-purpose gardening (small scale cash crops) with temporary irrigation 	<ul style="list-style-type: none"> ▪ Restoration of riverbanks (60 ha) ▪ Development of an access corridor to the river for livestock ▪ Strengthening families’ vegetable multi-purpose gardens ▪ NTFP enterprise development for women ▪ Development of beekeeping ▪ Communities’ co-participation in the management of CFs, by e.g. sharing the cost burden (primarily through labor) but also reaping part of the benefits
Tissé CF	Bekeyou; Tissé; Didjé	<ul style="list-style-type: none"> ▪ Trial commercial firewood scheme underway with GGFs (<i>Groupement villageois de gestion forestière</i>) ▪ GGFs responsible for forest maintenance and fight against bush fires ▪ Withholding a site to test the preventive management of bushfires ▪ Bekeyou operates a shoal of 10 ha partially exploited for gardening from temporary sumps 	<ul style="list-style-type: none"> ▪ Riverbank protection / restoration (no hectareage defined) ▪ Prevention and management of bushfires ▪ Corridor for livestock to access the river ▪ NTFP enterprise development for women ▪ Development of beekeeping
Sorobouli CF	Sorobouli (with Boromissi, SACACO and Dar Salam)	<ul style="list-style-type: none"> ▪ Classified Forests (CF) are under weak supervision; local actors are poorly organized for promoting participatory (or co-) management of State forests ▪ Uncontrolled bushfires ▪ Significant agricultural footprint caused by three other villages Sorobouli ▪ Some actions must involve three other villages: Boromissi, SECACO, Dar Salam 	<ul style="list-style-type: none"> ▪ Riverbank protection / restoration (no hectareage defined) ▪ Prevention and management of bushfires, coupled with enrichment of forest areas ▪ Corridor for livestock to access the river ▪ NTFP enterprise development for women (in the 3 villages mentioned) ▪ Development of beekeeping
Kalio CF and hunting concession	Koualio ; Lia ; Siyoro; Bokin	<ul style="list-style-type: none"> ▪ Kalio CF occupies more than 50% of the municipal territory of Zamo ▪ Was subject to ‘illegal’ agricultural occupation; now 	<ul style="list-style-type: none"> ▪ Development of floodplain areas ▪ NTFP enterprise development for women in Koualio, Lia, and Siyoro Bokin

Site	Relevant villages	Considerations on the proposed activities	Activities proposed from communities “wish-list”
		<p>status that limits the access of local communities to natural resources</p> <ul style="list-style-type: none"> ▪ Need to find alternative livelihoods, especially land that allow year-round production ▪ In its management plan, the concessionaire has planned for water provision that will be shared with the village Koualio 	
Tiogo CF	Bwo Tiogo Tiogo-Mouhoun	<ul style="list-style-type: none"> ▪ Managed forest for commercial firewood with participation of 15 GGFs ▪ Subjected to agricultural pressures from eight other villages in the municipality of Kion (7) and Tenado (1) ▪ Withholding as a site to test the preventive management of bushfires ▪ Some market gardening using temporary sumps 	<ul style="list-style-type: none"> ▪ Riverbank protection / restoration (no hectareage defined) ▪ Prevention and management of bushfires, coupled with enrichment of forest areas ▪ Corridor for livestock to access the river ▪ NTFP enterprise development for women (in the 3 villages mentioned) ▪ Development of beekeeping

Table 10: Proposed activities from initial consultations in MdO

Relevant villages	Activities proposed
Djalafanka	<ul style="list-style-type: none"> ▪ Development of small reservoirs to relieve pressure on MdO before the critical dry period ▪ Recovery of degraded lands and reforestation on the glacis and on banks of MdO ▪ Enrichment of bourgou (<i>Echinochloa stagnina</i>, an aquatic plant mainly used as a fodder but also can be income-generating for women when turned into juice and syrup) ▪ Reintroduction of the native Gamba grass (<i>Andropogon gayanus</i>) used mainly by women
Tounté	<ul style="list-style-type: none"> ▪ Development of small reservoirs to relieve pressure on MdO before the critical dry period ▪ Recovery of degraded lands and reforestation on the glacis and on banks of MdO ▪ Enrichment of bourgou ▪ Reintroduction of Gamba grass
Gonadaouri	<ul style="list-style-type: none"> ▪ Recovery of degraded lands and reforestation on the glacis and on banks of ponds ▪ Dune fixation to fight against silting of the lake ▪ Reintroduction of bourgou ▪ Development of anti-erosion sites ▪ Commitment to work with other villages to safeguard the MdO ▪ Sheep fattening (managed by women)
Kollel	<ul style="list-style-type: none"> ▪ Developing a <i>bouli</i>/pond ▪ Potential for multi-purpose gardening ▪ Recovery of degraded lands ▪ Bourgou enrichment
Oursi	<ul style="list-style-type: none"> ▪ Recovery of degraded land ▪ Delimitation of areas for market gardening e.g. from local seed ▪ Dune fixation to fight siltation ▪ Re-introduction of bourgou and locally extinct species (e.g. baobab) ▪ Expansion of the pastoral pond Zarmakoye

Relevant villages	Activities proposed
	<ul style="list-style-type: none"> ▪ Training and development especially for women
Totori	<ul style="list-style-type: none"> ▪ Expansion of a pond ▪ Rehabilitation of boreholes ▪ Recovery of degraded lands ▪ Enrichment of bourgou ▪ Training managers (esp. women) for organizations
Yomboli	<ul style="list-style-type: none"> ▪ Expansion of a pond ▪ Reforestation of the banks with suitable fruit trees ▪ Treatment of gullies / planning anti-erosion sites; ▪ Enrichment of bourgou ▪ Drilling for water ▪ Re-introduction of species
Considerations on the proposed activities:	
	<ul style="list-style-type: none"> ▪ Social relationships among groups of resource users within the Mdo Wetlands Basin hang at times on a fragile balance. The refugee situation since the onset of the conflict in Mali has not helped this. ▪ Much of the land is naturally barren and the few lands that allow for agriculture are being over-utilized. ▪ The soil is sandy and rocky, posing a few unusual challenges to land-use management.

Table 11. Feasibility Analysis of foreseen activities in the BdM Forest Corridor

[In French – to be revisited at project inception]

Analyse de faisabilité des activités prévues dans la zone du corridor forestier de la BdM

Activité	Objectifs visés à travers l'activité	Approche de mise en œuvre	Faisabilité technique et économique	Cible à atteindre à la fin du projet
la récupération de terres dégradées dans les forêts classées	<ul style="list-style-type: none"> ▪ Restaurer le couvert végétal sur les plages dénudées dans les FC 	<ul style="list-style-type: none"> ▪ Les travaux de génie civil seront exécutés par la brigade du génie forestier du MEDD à l'aide d'engins mécanisés 	L'essentiel des terres dégradées à récupérer sont situées le long des berges du fleuve. Il s'agit de sols lourds et profonds (bruns eutrophes à hydromorphes)	500 ha au total sous forme de démonstration
la protection des berges du fleuve y compris le traitement des ravins	<ul style="list-style-type: none"> ▪ Soustraire les berges de l'exploitation agricole ▪ Restaurer le couvert végétal sur la bande réglementaire de protection des eaux 	<ul style="list-style-type: none"> ▪ Les populations riveraines participeront aux plantations sous forme de travaux HIMO ▪ Les sites serviront de « champs école » pour les autres acteurs ▪ Chaque communauté sera responsabilisée en vue de la protection des investissements, moyennant un désintéressement collectif dont les modalités de libération sont consignées dans un protocole d'accord avec le projet. 	<p>Les opérations de protection des berges impliqueront donc selon les besoins :</p> <ul style="list-style-type: none"> ▪ La soustraction de la bande de protection des eaux de toute activité humaine ▪ L'enrichissement de la végétation grâce à des plantations d'essences adaptées en combinaison avec des mesures manuelles de CES (microbassins notamment) ▪ Lorsque le sol est nu, les travaux de récupération feront appel à la brigade de génie forestier du MEDD pour la confection de diguettes en terre ou de micro-bassins associées au scarifiage ou au 	

Activité	Objectifs visés à travers l'activité	Approche de mise en œuvre	Faisabilité technique et économique	Cible à atteindre à la fin du projet
			<p>labour en plein. Les plantations se feront avec la participation des communautés riveraines, sous forme de travaux HIMO</p> <ul style="list-style-type: none"> Le coût à l'ha de ce type d'intervention est estimé à 200.000 F. CFA (400 US\$) 	
La promotion de l'agroforesterie et de l'arboriculture et promouvoir l'agriculture biologique dans la zone de confluence Mouhoun-Sourou	<ul style="list-style-type: none"> Créer des sources de revenus tout en protégeant les sols fragiles de la zone en « plantant utile » 	<ul style="list-style-type: none"> Il s'agit d'encourager les occupants de ce triangle de terre à intensifier leurs systèmes de production de façon à générer des revenus tout en respectant les normes réglementaires en matière de protection des eaux. 	<p>Les opérations de protection des berges impliqueront :</p> <ul style="list-style-type: none"> La soustraction de la bande de protection des eaux de toute activité humaine L'enrichissement de la végétation grâce à des plantations d'essences adaptées en combinaison avec des mesures manuelles de CES (microbassins notamment) <p>Les espèces fruitières (dont le choix a été fait en concertation avec les paysans) seront alors fournies aux exploitants à prix subventionnés.</p>	80 ha seront concernés sur les deux rives du bras mort du Mouhoun
L'aménagement de bas-fonds	<ul style="list-style-type: none"> Accroître les superficies de terre exploitables en hivernage 	<ul style="list-style-type: none"> A l'entreprise, avec la participation des communautés, de préférence sous la forme de travaux HIMO 	<ul style="list-style-type: none"> L'aménagement consistera en la réalisation de diguettes filtrantes disposées dans le périmètre selon les courbes de niveau. Les populations riveraines participeront aux travaux sous forme de travaux à HIMO 	80 ha ; principalement dans la commune de Zamo
L'aménagement de périmètres maraichers villageois	<ul style="list-style-type: none"> Accroître les revenus agricoles en saison sèche 	A l'entreprise	<ul style="list-style-type: none"> Le projet appuiera la réalisation de puits maraichers stabilisés, d'une profondeur moyenne de 20 m à raison de 1 puits pour 2500 m2 de jardin à irriguer ? 	10 ha répartis sur 4 sites : Banouba, Békéyou, Kalio et Bwo
Les activités de prévention et de gestion des feux de brousse		<ul style="list-style-type: none"> Il s'agira de s'appuyer sur le dispositif de gestion participative existant pour responsabiliser chaque GGF sur son Unité d'Aménagement. Un protocole d'accord liera alors le projet à chaque GGF pour l'entretien des coupe-feux. 	<ul style="list-style-type: none"> Afin de rendre les pare-feux plus efficaces et d'entretien moins coûteux, les GGF seront encouragés à mettre chaque pare-feu sous culture basse pendant l'hivernage (Niébé, arachide, sésame..). Après récolte la bande n'a plus besoin d'entretien en saison sèche Le projet appuiera en contrepartie les activités du GGF, le tout dans le cadre d'un protocole passé entre les deux parties. 	150 km de pare-feux sur les 2 FC de Tissé et Tiogo seront entretenus annuellement
La matérialisation de couloirs à bétail pour l'accès à l'eau du fleuve.	<ul style="list-style-type: none"> Canaliser les points de passage des animaux en vue de réduire les dégâts qu'ils pourraient causer, notamment sur les investissements en cours 	<ul style="list-style-type: none"> Avec la participation de chaque village. Le projet assurera le lever topographique Marquage des arbres à la peinture par les villageois Signalisation verticale régulière par le projet 		50 km
L'appui au développement de micro-entreprises rurales de transformation et de valorisation de PFNL au profit des femmes	<ul style="list-style-type: none"> Améliorer la résilience des femmes Valoriser sur le marché les biens et services fournis par les écosystèmes naturels 	<p>Le projet bénéficiera de l'assistance de l'APFNL en vue de :</p> <ul style="list-style-type: none"> Appuyer les groupements de femmes dans l'identification de leur projet et dans l'étude du marché Former leurs membres aux techniques de transformation et de valorisation de divers PFNL parmi les plus rentables et disponibles dans les FC du corridor 	<ul style="list-style-type: none"> L'Agence de Promotion des PFNL dispose de l'expertise nécessaire pour accompagner le processus de création des entreprises rurales de PFNL et accompagner à travers la formation et le suivi tous les groupements de femmes qui auront bénéficié d'un appui du projet. De nombreuses expériences montrent par ailleurs que l'activité est économiquement rentable, même dans des conditions écologiques moins favorables 	<ul style="list-style-type: none"> 10 Entreprises rurales de PFNL à créer ; former et suivre à la fin du projet. Au moins 3 nouvelles entreprises opérationnelles chaque année

Activité	Objectifs visés à travers l'activité	Approche de mise en œuvre	Faisabilité technique et économique	Cible à atteindre à la fin du projet
		<ul style="list-style-type: none"> Les former aux techniques et aux outils de gestion de leur entreprise Assurer un suivi 	que dans le corridor de la BdM	
Développement de l'apiculture moderne	Accroître les revenus tirés de la forêt	<p>Le projet recrutera un consultant (firme) disposant d'une expertise confirmée pour :</p> <ul style="list-style-type: none"> Assurer la formation des volontaires identifiés par village Assurer un suivi opérationnel pendant la première miellée Procéder à leur recyclage au moins 1 an après <p>Le projet proposera aux volontaires un équipement minimum à prix subventionné et sous forme de prêt remboursable, au besoin à travers une IMF.</p>	L'apiculture est une activité reconnue comme rentable : la production nationale étant très loin de couvrir la demande intérieure.	60 à 100 apiculteurs formés et équipés dans 10 villages de la BdM

Table 12. Feasibility Analysis of foreseen activities in the MdO Wetlands Basin

[In French – to be revisited at project inception]

Analyse de faisabilité des activités prévues dans la zone du bassin de la MdO

Activité	Objectifs visés à travers l'activité	Approche de mise en œuvre	Faisabilité technique et économique	Cible à atteindre à la fin du projet
La récupération des terres dégradées	Limiter le transport des éléments fins liés au ruissellement et à l'érosion et combattre l'envasement de la mare..	<ul style="list-style-type: none"> Par sous-solage mécanisé avec semis directs et reboisement avec des espèces fourragères ligneuses (<i>A. raddiana</i>, <i>B. aegyptiaca</i>, <i>A. nilotica</i> ; ...) et herbacées (<i>Andropogon gayanus</i>, <i>Leptadenia pyrotechnica</i>) sur les glacis et zones dénudées du bassin versant de la MdO. Elle sera renforcée par des dispositifs antiérosifs (banquettes en terre avec plantation en amont) pour consolider ses effets. Les travaux de génie civil seront exécutés à l'aide d'engins mécanisés adaptés (charrue <i>Delfino</i>), tandis que les plantations seront assurées avec la participation des communautés locales, selon une approche HIMO. Les sites serviront de « champs école » dans lesquels on réintroduira certaines espèces fourragères, destinées à enrichir les pâturages. 	<ul style="list-style-type: none"> Le Ministère de l'Environnement dispose d'une brigade d'intervention de génie forestier rompue à ce type d'intervention Les expériences précédentes exécutées dans les Régions du Sahel, du Nord ou du Centre-Nord attestent de la faisabilité technique et de l'efficacité de ces techniques. Les impacts de l'intervention de l'ONG REACH ITALIA en vue de la reforestation et de la restauration du tapis herbacé dans la province peuvent servir de sources d'exemple. De telles interventions permettent à très moyen terme d'atteindre une production pouvant atteindre 2.000 kg de MS herbacée par ha. Les coûts sont par ailleurs maîtrisables (200.000 F/ha) 	500 ha/ an, soit 3.000 ha au bout de 6 ans. Au regard de l'engouement actuel des populations de la commune d'Oursi pour protéger la mare, une telle cible est envisageable
La fixation des dunes dans la zone de l'erg récent de la MdO	Ralentir l'érosion éolienne et l'ensablement de la MdO	<ul style="list-style-type: none"> Pour cette action dont l'importance est capitale pour la survie de la Mare, des activités d'animation, de sensibilisation et de communication devront être élaborées et 	<ul style="list-style-type: none"> Différentes techniques seront expérimentées sur des secteurs identifiés du cordon dunaire de manière à constituer un continuum, y compris les méthodes biologiques utilisant <i>Leptadenia</i> sp. 	200 ha/an soit 1200 ha minimum à la fin du projet paraît une cible réalisable moyennant les

Activité	Objectifs visés à travers l'activité	Approche de mise en œuvre	Faisabilité technique et économique	Cible à atteindre à la fin du projet
		<p>exécutées de manière approfondie.</p> <ul style="list-style-type: none"> ▪ Des brigades vertes seront constituées avec la participation des représentants de tous les villages mettant au centre de leurs préoccupations la préservation de la MdO. Elles auront pour tâches principales l'identification de leurs secteurs de prédilection, le rassemblement de tout le matériel nécessaire à la plantation, à la surveillance et à l'entretien des cordons de fixation mis en place ▪ L'action devrait être combinée à d'autres dont le renforcement des capacités de membres des brigades, constituées à 50% au moins de femmes, afin de leur permettre d'élaborer des mécanismes de lutte durable contre l'ensablement. ▪ Les acteurs locaux seront formés à la récolte des semences et à la production des plants 	<p>Euphorbia Sp et toutes autres espèces ayant fourni des résultats intéressants dans la Région. A cet égard, les expériences du PLCE dans la commune de Gorom-Gorom peuvent servir d'exemples vivants.</p> <ul style="list-style-type: none"> ▪ En raison du déficit alimentaire chronique, un partenariat pourrait être recherché avec le PAM pour un appui sous forme « food for work ». Toute autre approche jugée performante peut aussi être testée (ex. PLCE) ▪ La commune de Oursi devra être au centre de la dynamique, pour la mise en œuvre de son plan communal de développement qui il faut le regretter n'en parle pas de manière spécifique 	<p>accompagnements proposées dans l'approche de mise en œuvre</p>
<p>L'aménagement de sites de production et de mise en défens d'espèces fourragères et de zones d'expérimentation et de production de fourrage, par la réintroduction d'espèces « disparues » y compris par semis directs dans les sites de récupération des terres dégradées</p>	<p>Créer les conditions pour l'enrichissement continu et la régénération des pâtures de qualité</p>	<ul style="list-style-type: none"> ▪ Les espèces à réintroduire peuvent être : le Sorgho fourrager, le niébé à double usage, <i>Cenchrus ciliaris</i> ou <i>Dolichos biflora</i>. ▪ Ces sites pourraient être mis en place comme une réponse aux sollicitations des femmes parcourant des centaines de kms à la recherche de tiges de certaines de ces espèces pour leurs activités de vannerie 	<ul style="list-style-type: none"> ▪ Les sites seront de préférence installés sur des terres récupérées ou en récupération ▪ La réintroduction des espèces herbacées ou ligneuses utiles sur des terres réhabilitées pourrait constituer une école pour les nombreux acteurs de la zone dans le recherche des solutions à une gestion durable des écosystèmes sylvo-pastoraux. 	<p>Au moins 5 sites de 2 à 3ha chacun sur le bassin versant de la mare</p>
<p>La Protection des berges de la mare d'Oursi</p>	<ul style="list-style-type: none"> ▪ Réduire les sources d'apports solides dans la mare en vue de freiner son ensablement ▪ Organiser l'accès à l'eau et aux pâturages de décrue 	<ul style="list-style-type: none"> ▪ Il s'agira d'intéresser différents acteurs privés, prêts à s'investir pour une telle protection <u>en leur garantissant les droits ultérieurs d'exploitation des portions qu'ils auront participé à protéger.</u> ▪ La formule la plus appropriée serait de s'inspirer de l'exemple du groupement qui exploite la parcelle de « Ziziphus greffés » (pomme du Sahel) mise en place avec l'INERA pour créer, dans le pourtour de mare dans la partie la plus proche de la zone d'inondation, des parcelles protégées de « pommiers du sahel » par les soins des acteurs locaux. ▪ Cela nécessitera la mise en place d'une pépinière et la formation des volontaires aux 	<p>Au plan technique, l'opération consistera à créer trois bandes concentriques de végétation à partir du lit majeur de la mare vers les terres hautes :</p> <ul style="list-style-type: none"> ▪ Une bande d'enrichissement de la bourgoutière à l'aide dans le lit majeur du lac par l'introduction d'espèces fourragères adaptées ▪ Une première bande de 50 m de large au moins consistera en des plantations d'espèces locales adaptées à des crues temporaires de courte durée et dont les fruits peuvent générer des revenus (Ziziphus greffé ou « pomme du sahel »). La gestion des plantations de cette première bande est de type privée, confiée à des groupements d'intérêt qui exploiteront les terres selon leurs intérêts (agroforesterie). ▪ Une seconde bande d'au moins 50 m de large et 	<ul style="list-style-type: none"> ▪ 200 ha de bourgou sont enrichis chaque année ▪ 10 groupements d'intérêt sont organisés tout autour de la mare ▪ 40 ha de bandes de plantations d'une largeur de 100 m, dont 20 ha de d'espèces fruitières locales à gestion privé ▪ Des couloirs d'accès de 30 m sont aménagés et balisés de haies vives (à base d'euphorbes ou de leptadenia) sont réalisés tous les 400 m

Activité	Objectifs visés à travers l'activité	Approche de mise en œuvre	Faisabilité technique et économique	Cible à atteindre à la fin du projet
		<p>techniques de greffage du <i>Ziziphus</i>.</p> <ul style="list-style-type: none"> ▪ Ces volontaires seront organisés en groupements d'intérêt qui devront par la suite signer des conventions avec la commune pour le respect d'un cahier de charges d'exploitation permettant la constitution d'un fonds local pour la préservation de la MdO . ▪ L'approche de mise en œuvre proposée tient compte du statut des terres et des pratiques foncières autour de la mare (l'accès et l'utilisation des terres sont libres) 	<p>plantée d'espèces forestières à usages multiples (<i>Acacia nilotica</i>, <i>Acacia tortilis</i>, <i>Acacia senegal</i> ou encore <i>Tamarindus indica</i>) permettant de disposer de PFNL la protection des plantations de cette seconde bande est assurée individuellement par des acteurs sur la base d'un désintéressement contractuel⁹⁶. L'expérimentation pourra démarrer avec 5 groupes fonctionnels d'au moins 10 membres par an avec pour chaque membre, 100 arbres à gérer.</p> <ul style="list-style-type: none"> ▪ Des couloirs d'accès au bétail seront aménagés seront aménagés tous les 400 m et balisés à l'aide de haies-vives faites d'<i>Euphorbia balsamifera</i> ou de <i>Leptadenia pyrotechnica</i>. 	
Le traitement des Oueds (ravines) sur le bassin versant des mares	<ul style="list-style-type: none"> ▪ Lutter contre l'ensablement accéléré des mares d'Oursi, de Yomboli et Gounandaouri 	<ul style="list-style-type: none"> ▪ Réalisation à l'entreprise sur consultation de PME locales qualifiées. ▪ Au besoin selon la formule HIMO dans le cadre de protocoles d'accord écrits avec les communautés bénéficiaires. ▪ Quatre ouvrages 	<ul style="list-style-type: none"> ▪ Il s'agit de réaliser des digues filtrantes classiques avec gabions, bien ancrée dans l'oued en travers de celui-ci ▪ Les sites retenus l'ont été sur la base du fait que les matériaux locaux (moellons) sont disponibles à proximité. Quatre ouvrages ont ainsi été retenus dans les localités de Totori, Dialafanka, Kollo et Tounté. ▪ Les coûts de ces ouvrages varient de 40.000 US\$ à 80.000 US\$ selon le site 	<ul style="list-style-type: none"> ▪ 4 ouvrages dans les localités de Totori, Dialafanka, Kollo et Tounté.
L'aménagement ou l'agrandissement de « boulis » dans les zones « périphériques »	<ul style="list-style-type: none"> ▪ Mobiliser des ressources alternatives en eau au cas où la mare connaît des difficultés ▪ Réduire la pression sur la mare, en début de saison sèche ▪ Développer éventuellement le maraichage de contre-saison ▪ Alimenter la nappe phréatique d'un forage voisin 	Réalisation à l'entreprise sur appel à concurrence	<ul style="list-style-type: none"> ▪ Les sites proposés sont au nombre de cinq, situés dans les localités de Totori, Dialafanka, Kollo, Tounté et Yomboli. ▪ Sur certains sites (Tounté), les populations ont entamé la réalisation de l'ouvrage avec les moyens du bord. ▪ Les coûts des ouvrages sont estimés entre 40.000 US\$ et 100.000 US\$ selon les superficies et la capacité de stockage ▪ Autour de ces boulis et en fonction de l'importance et de l'organisation des populations, il pourrait être organisé au bénéfice des femmes de petits jardins polyvalents à l'image de l'expérience du projet du PANA-FEM. 	5 ouvrages dans les localités de Totori, Dialafanka, Kollo, Tounté et Yomboli.
L'appui à l'élaboration d'un plan équitable et résilient au climat pour l'utilisation des ressources pastorales et de l'eau dans le bassin des zones	Elaborer une charte locale ayant un caractère contraignant , équitable et résilient au climat pour l'utilisation des ressources pastorales et de l'eau et visant à éviter la surcharge pendant la saison sèche	Une ONG expérimentée et connaissant l'environnement du sahel et la problématique de la zone sera recrutée en vue de procéder, avec le soutien des communautés sédentaires, des groupes transhumants et des Collectivités territoriales compétentes à l'élaboration de la charte locale	<ul style="list-style-type: none"> ▪ L'utilisation des ressources naturelles de la MdO s'inscrit dans un espace qui dépasse largement la commune d'Oursi. ▪ L'implication des groupes transhumants, dont certains viennent du Mali voisin commande que l'élaboration et la mise en œuvre de cette charte soient décidées et suivies à l'échelle régionale, avec 	Une

⁹⁶ Une fois les semis effectués, les plants mis en terre ou les arbustes identifiés par le groupe, chaque membre est responsabilisé pour le suivi et l'entretien d'un certain nombre d'arbres. Son désintéressement peut être assuré par arbre vivant au bout d'un terme convenu, entretenu, sur la base de critères concertés sur la durée.

Activité	Objectifs visés à travers l'activité	Approche de mise en œuvre	Faisabilité technique et économique	Cible à atteindre à la fin du projet
humides de la MdO			l'implication de la Région, collectivité et sous le guidage de l'autorité administrative régionale	
L'appui aux activités productrices des femmes (maraichage et embouche animale)	Améliorer la résilience des femmes d'Oursi	Il s'agit d'appuyer le renforcement d'une activité menée à petite échelle par les femmes d'Oursi sur les bords du lac	<ul style="list-style-type: none"> ▪ Il s'agit de fournir à 3 groupes de femmes volontaires et organisées (de 10 à 20 membres par groupe) ; les ressources nécessaires pour aménager et clôturer un jardin polyvalent de 0,25 ha alimenté par un puits stabilisé de 20 m de profondeur maximum. ▪ Les jardins seront situés sur les berges immédiates en zone non inondable, de façon à permettre une exploitation continue selon les intérêts du groupe. ▪ Pour l'embouche ovine, chaque groupe dans les villages sera constitué d'une vingtaine de femmes qui seront dotées d'animaux et d'un kit pour l'alimentation et les soins sanitaires de démarrage. 	3 jardins polyvalents

Annex 4: Co-Finance Letters

Name of Co-financier	Date of letter ⁽¹⁾	Co-financing Amount (\$)
Ministry of Environment and Sustainable Development (MEDD), Finance and Administration Section	28-Jan-14	770,000
MEDD, Minister's Office (pertaining to the Forest Investment Program)*	19-Feb-14	7,000,000
MEDD, National Program for Silt Control (PLCE/BN)*	05-Feb-14	3,229,673
MEDD, National Office for Protected Areas (OFINAP)*	17-Feb-14	2,375,600
MEDD, National Program for Forests	28-Feb-14	2,050,000
National Agency for the Promotion of Non-Timber Forest Products (APFLN)	25-Feb-14	647,300
Ministry of Agriculture, Hydraulics and Fisheries Resources (MAHRH)	24-Feb-14	600,000
Regional Government of the Boucle du Mouhoun	29-Jan-14	200,000
NATURAMA ⁽²⁾	24-Feb-14	33,500
OCADES (Letter 1 - referring to period 01/07/2014 - 31/03/2015)	28-Feb-14	208,724
OCADES (Letter 2 - referring to period 01/04/12 - 31/03/2015)	27-Feb-14	852,744
Veterinaires sans Frontiers - VTF	28-Nov-13	4,690,000
United Nations Development Program - UNDP	05-Mar-2014	8,015,000
TOTAL Amount mobilized		30,672,541

Note: (1) Letters in French are accompanied by translations. Amounts in CFA were converted to USD where no USD is indicated. (2) Some of the letters indicate that co-financing is provided both in-kind and in-cash. For the ease of reference, and given amount involved, we assessed that the bulk of the co-financing provided by these partners could be classified 'cash' in the GEF CEO Endorsement Request.

Refer to letters in a separate file [\[Link\]](#)

Annex 5: Additional Cost Analysis

Table 13: Demonstration of Cost-effectiveness for each proposed Output

Cost/Benefit	Baseline (B)	Alternative (A)	Project and Additional costs (A-B)
<p>Outcome 1: Increase knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system</p>	<p>Various information sources but not utilized at sub-national level and not geared to EBA activities; limited translation of available information to decision-making purposes</p> <p>Baseline Finance: \$ 13.1 million</p>	<ul style="list-style-type: none"> - Development of SICOFORMO system within ONEDD: within existing data management systems and information sharing on environment and development via ONEDD; capacity for agro-sylvo-pastoral data management within DCIME (host of ONEDD); additional data gathering at sub-national level - Development of a co-supportive linked system at the two project zones: feeding into or benefiting from national data management and information sharing systems; benefiting from and building existing technical capacities and systems <p>Total costs of the alternative LDCF + Baseline + co-financing beyond the baseline TOTAL: \$ 14.4 million</p>	<p>LDCF + any co-financing mobilized beyond the baseline:</p> <p>\$ 1,034 K</p> <p><i>LDCF \$ 1,034 K</i> <i>Non-baseline co-financing \$0</i></p>
<p>Outcome 2: Strengthen the climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO are by focusing on vulnerable natural and social assets in target project sites</p>	<p>Efforts to strengthen livelihoods not considering climate risks or adaptation needs Planning and finance not taking into account climate risks and adaptation potential, esp. at sub-national levels</p> <p>Baseline Finance: \$ 49.3 million</p>	<ul style="list-style-type: none"> - Dissemination of ecosystem-based adaptation techniques and technologies, involving community in decision-making and building local capacity; on the basis of solid development and livelihoods investments, with which the project will collaborate and foster synergies. - Over time, the EBA model demonstrates a cost-effective way of building natural and social assets, many with multiple benefits; - Focus on women as major actors in the regions <p>Total costs of the alternative LDCF + Baseline + co-financing beyond the baseline TOTAL: \$ 68.8million</p>	<p>LDCF + any co-financing mobilized beyond the baseline:</p> <p>\$ 9,950 K</p> <p><i>LDCF \$ 5,260 K</i> <i>Non-baseline co-financing \$4,990 K</i></p>
<p>Outcome 3: Integrate climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin into key sectoral planning and investment frameworks with focus on local and regional levels</p>	<p>Climate change adaptation is not sufficiently mainstreamed into key sectoral planning and investment frameworks</p> <p>Baseline Finance: \$33.5 million</p>	<ul style="list-style-type: none"> - Engagement with local and regional authorities with respect to the decentralized planning and budgeting processes - Integration of this component with the national PEI program in a synergetic way. <p>Total costs of the alternative LDCF + Baseline + co-financing beyond the baseline TOTAL: \$ 42.5 million</p>	<p>LDCF + any co-financing mobilized beyond the baseline:</p> <p>\$ 606 K</p> <p><i>LDCF \$ 0.406 K</i> <i>Non-baseline co-financing \$0.200 K</i></p>

Cost/Benefit	Baseline (B)	Alternative (A)	Project and Additional costs (A-B)
Project Management	n/a	Total costs of the alternative LDCF + co-financing beyond the baseline TOTAL: \$ 0.9 million	LDCF + mobilized co-financing: \$ 1,225 K <i>LDCF</i> \$ 7,000 K <i>Non-baseline co-financing</i> \$ 5,815 K
TOTAL	\$95.9 million	\$ 126.6 million	\$ 12,815 K

Annex 6: Detailed Stakeholder Involvement Matrix

Table 14. Summary of planned stakeholder involvement as per Outcomes and Outputs

Outcomes	Outputs	Stakeholders
Outcome 1: Increase knowledge and understanding of climate variability and change-induced risks in the project targeted areas generated by a customized geo-based agro-ecological and hydrological information system	<p>Output 1.1: A geo-based climatic, agro-ecological and hydrological information system (“SICOFORMO”), hosted by SP/CONNED and focusing initially on the BdM Forest Corridor and the MdO Wetlands Basin, is operational by end of project year 1 and it enables the analysis of climate-driven vulnerabilities and the cost-effective planning of specific adaptation interventions in Component 2 for strengthening social and natural assets.</p> <p>Output 1.2: Approx. 30 national and provincial planners, plus 60 local commune leaders and 30 staff from NGOs/CSOs are trained on the use and interpretation of analyses from the ‘SICOFORMO’ system and associated knowledge products with the aim of using them for climate-adaptive development planning and implementation, including with local communities.</p>	<p>MEDD, SP/CONNED Meteorological Services Relevant line Ministries Regional extension officers End-users at regional and local levels in two pilot zones Other related projects and programs</p>
Outcome 2: Strengthen the climate resilience of key agro-ecological and hydrological systems and of natural resource dependent livelihoods in the BdM and MdO are by focusing on vulnerable natural and social assets in target project sites	<p>Output 2.1: Effective demonstration site level participatory governance and project implementation structures are established, local adaptation plans are implemented and local commune leaders and resource users are trained in climate adaptive and anticipatory management of natural and social assets.</p> <p>Output 2.2: Critical wetland areas, covering some 1,600 ha and of ephemeral rivers and lakes in the MdO Wetlands Basin, and which support 24,000 livelihoods, become more resilient to desiccation through improved management of water usage and soil erosion (e.g. deforestation, trampling by livestock), and the replanting and protection of indigenous grasses and herbaceous vegetation resilient to significant climatic variance.</p> <p>Output 2.3: Flood and erosion control is ensured through a “surgical” and climate anticipatory approach in the MdO, by establishing flood tolerant and erosion resistant grassed and herbaceous swales.</p> <p>Output 2.4: Gazetted forests in the BdM are protected against climate-induced bushfire.</p> <p>Output 2.5: Through locally decided and enforced by-laws, an equitable and climate resilient plan for the use of pasture and water resources in the MdO Wetlands Basin, aimed at avoiding overstocking during the dry season, is implemented with the support from sedentary communities and transhumant groups.</p>	<p>Identified communities in two project zones MdO & BdM Relevant line Ministries Regional extension officers End-users at regional and local levels in two pilot zones Other related projects and programs</p>

Outcomes	Outputs	Stakeholders
	Output 2.6: Polyculture and adaptive agro-ecological production systems in communal lands (at least 400ha).	
Outcome 3: Integrate climate adaptive management of agro-ecological and hydrological systems in the BdM Forest Corridor and the MdO Wetlands Basin into key sectoral planning and investment frameworks with focus on local and regional levels	<p>Output 3.1: Climate risk management and climate resilient landscape management are integrated into the management (or master) plans for the BdM and MdO and relevant sub-strategies and plans.</p> <p>Output 3.2: Through learning, sharing, partnerships and wide collaboration frameworks, the project and ongoing rural development programs and related initiatives in the MdO Wetlands Basin and the BdM Forest Corridor address climate change concerns and options in their planning and implementation.</p>	<p>MEDD/ SP/CONNED</p> <p>Identified communities in two project zones MdO & BdM</p> <p>Relevant line Ministries</p> <p>Regional extension officers</p> <p>End-users at regional and local levels in two pilot zones</p> <p>Other related projects and programs</p>

Table 15. Summary of main synergies with related projects and programs

Program, project or initiative	Synergies
<p>(i) Other LDCF projects aiming at NAPA implementation, in particular: Agro-Sylvo-Pastoral demonstration project (through UNDP), Farmers' School Approach (through FAO) Early Warning Systems (through UNDP)</p> <p>(ii) Other, non-LDCF initiatives that address climate change adaptation needs: e.g. AAP, PANA-Danida and others*</p>	<ul style="list-style-type: none"> • Capitalizing on the national and local level capacity for adaptation that has been developed with the help of these projects (all components) • Addressing the adaptation agenda through sectoral mainstreaming of climate change and policy development (Component 3) • Lessons learning (all components)
<p>(i) UNDP Programs co-supportive of the project (ACRIC, COGEL, Decent Employment, PEI, Sub-regional programs in Burkina, Africa sub-regional programs)</p> <p>(ii) GEF programs on the ground focusing on NRM</p>	<ul style="list-style-type: none"> • Collaboration on the ground, including on livelihoods and sub-national planning (Components 2 and 3) • Addressing the resilience agenda at various levels • Policy development, including sectoral • Linkages with broader initiatives in the Sahel • Seeking operational, partnerships and M&E collaboration with GEF projects (i) under the 'Country Partnership Program' for Land Degradation (CPP), which are active in the project zones (Boucle du Mouhoun and Centre-Ouest Regions; Sahel Region); and (ii) a GEF biodiversity project focusing on the buffer zones of the protected areas within the BdM Forest Corridor.
Programs focusing on knowledge development for tackling climate change and benefitting sub-regional institutions (AMESD, CORDEX)	<ul style="list-style-type: none"> • Sharing of climate data and analysis, including through feedback from the project
Land, forests and water programs (PAGIRE, REDD FIP, PNGT2/3, AfDB-PLCE, OFINAP, APFLN) plus various NGO driven livelihood programs	<ul style="list-style-type: none"> • Development and implementation of adaptation activities under Component 2

* Note: See PRODOC sub-chapter [Other relevant national and regional related initiatives that already address the climate problem](#)

Annex 7: Terms of Reference for Project Staff /Consultants

Terms of Reference (ToRs) for suggested project key staff/consultants are included in the below. The TORs may be reviewed and adjusted during the inception phase.

- National Project Manager
- IT and GIS Manager (assigned to DCIME)
- Communications Expert
- Procurement & Accounting Manager
- Field Activity Coordinator x 2
- Field Technical Experts (in planning, M&E, and preferably in other technical areas) x 2
- *Jumelage* Team

National Project Manager
Background
The Project Manager works at national level and has overall responsibility for delivering the project successfully.
Duties and Responsibilities
<ul style="list-style-type: none"> • Supervise and coordinate the production of project outputs, as per the project document • Mobilize all project inputs in accordance with UNDP procedures for nationally executed projects • Supervise and coordinate the work of all project staff, consultants and sub-contractors • Coordinate the recruitment and selection of project personnel • Prepare and revise project work and financial plans, as required by UNDP • Liaise with UNDP, SP-CONEDD, relevant government agencies, and all project partners, including donor organizations and NGOs for effective coordination of all project activities • Facilitate administrative backstopping to subcontractors and training activities supported by the Project • Be responsible for the production and timely submission of the Inception Report, Combined Project Implementation Review/Annual Project Report (PIR/APR), Technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF, and other oversight agencies • Disseminate project reports and respond to queries from concerned stakeholders • Report progress of project to the PSC, and ensure the fulfillment of PSC directives • Oversee the exchange and sharing of experiences and lessons learned with relevant community based integrated conservation and development projects nationally and internationally • Ensures the timely and effective implementation of all components of the project • Assist community groups, municipalities, NGOs, staff, students and others with development of essential skills through training workshops and on the job training thereby upgrading their institutional capabilities • Coordinate and assists scientific institutions with the initiation and implementation of all field studies and monitoring components of the project • Perform any other duty relevant to the assignment
Competencies
<ul style="list-style-type: none"> • Very experienced project manager • Financial managementmanagement and control capabilities • Advanced leadership, negotiation and communication skills • Sensitive to context of the project

Required Skills and Experience
<ul style="list-style-type: none"> • Education: • Minimum MA or MSc in Social or Environmental Sciences, International Development, or related • Demonstrable background in Ecosystem Based Adaptation and related Climate Change and Natural Resource Management issues as asset • PRINCE2 certificate an advantage • Experience: • Minimum 10 years' experience in project management, of which 5 years is in an international context. • Experience in managing programs or project financial management, procurement, contracting, recruitment, and staff management. • Prior UNDP/GEF project experience and knowledge of UNDP and GEF procedures and guidelines. • Language: • Fluency in written and spoken French. • Skills in English an advantage.

IT and GIS Manager (assigned to DCIME)
Background
The IT and GIS Manager is stationed in DCIME (<i>Division du Développement des Compétences de l'information et du monitoring de l'environnement</i>) of SP/CONEDD. He or she will work for a period of 18 months to oversee the successful implementation of the SICOFORMO.
Duties and Responsibilities
<ul style="list-style-type: none"> • Responsible for overseeing the successful delivery of project Output 1.1: A geo-based climatic, agro-ecological and hydrological information system ('SICOFORMO'), hosted by SP/CONEDD and focusing initially on the BdM Forest Corridor and the Mdo Wetlands Basin. • The system must be operational by end of project year 1 and enable the analysis of climate-driven vulnerabilities and the cost-effective planning of specific adaptation interventions in Component 2 for strengthening social and natural assets. • Manage a Technical Advisory Group for the SICOFORMO • Liaise with node managers in Dori and Dédougou • Perform any other duty relevant to the assignment
Competencies
<ul style="list-style-type: none"> • Bookkeeping skills • Administration skills • Good organizational skills
Required Skills and Experience
<p>Education:</p> <ul style="list-style-type: none"> • A post-school qualification (diploma, or equivalent) • PRINCE2 certificate an advantage • Experience: • At least 5 years of administrative and/or financial management experience; • Demonstrable ability to administer project budgets, and track financial expenditure;

- Demonstrable ability to maintain effective communications with different stakeholders, and arrange stakeholder meetings and/or workshops;
- Excellent computer skills, in particular mastery of all applications of the MS Office package, in particular Excel; mastery of other finance applications is a plus;
- Prior UNDP/GEF project experience and knowledge of UNDP and GEF procedures and guidelines is an advantage.

Language:

- Fluency in written and spoken French.
- Skills in English an advantage.

Communications Expert

Background

The Communications Expert ensures wide understanding and dissemination of the project objectives, progress and lessons.

Duties and Responsibilities

- Responsible for project communications. Oversee the development, implementation and maintenance of a communications strategy to ensure that all stakeholders are informed on an on-going basis about the project's objectives and activities; overall project progress; and the opportunities for involvement in various aspects of the project's implementation.
- Involved in the delivery of Component 3 - especially facilitating the uptake of project learning into national, regional and sub-regional policy processes, and documentation of learning approaches to share via a long-term accessible platform (i.e. website) for replication.
- Contribute to UNDP's Adaptation Learning Mechanism (ALM) - used as a dissemination and sharing tool that is accessible by all and constantly updated with the most recent information from the project. Required to contribute to ALM on a regular basis noting case studies, successes and challenges.
- Perform any other duty relevant to the assignment

Competencies

- Capability and proven experience in crafting communications strategies with an eye toward results-based management.
- Capability and proven experience crafting messages in various formats (press releases, websites, success stories, blog entries, tweets, etc.) targeting a variety of audiences.
- Ability and proven experience in multi-tasking, in taking initiative and working effectively under pressure.
- Familiarity with branding compliance.
- Excellent written, oral and interpersonal skills.
- Knowledge of Microsoft Office and related communications software.
- Familiarity with mobile technologies, social media, and their application in rural communities.

Required Skills and Experience

Education:

- First degree in communications, journalism or a related field.
- Master's degree is advantageous.

Experience:

- A minimum of five years of professional experience in communications, public relations, journalism, marketing

- or a related field.
- Experience working constructively with rural communities.

Language:

- Fluency in written and spoken French required.
- Fluency in read English with reasonable translation skills.

Procurement & Accounting Manager
Background
The Accounting Manager provides support to the Project Manager to support overall project delivery in line with good accounting practice.
Duties and Responsibilities
<ul style="list-style-type: none"> • If applicable and needed, serve as the budget holder for GEF and UNDP funds • Collect, register and maintain all information on project activities, with focus on finance • Prepare and check all the necessary documentation for project procurement, in close collaboration with the Project Manager and the Chief Technical Advisor, and in consultation with the UNDP Country Office where needed (e.g. international procurement, where UNDP's service can be advantageous), and seeking external expertise (e.g. legal or in engineering) when needed. • Contribute to the preparation and implementation of annual workplans and progress reports • Monitor project activities, budgets and financial expenditures • Advise all project counterparts on applicable administrative procedures and ensures their proper implementation • Maintain project correspondence and communication • Support the preparations of project work-plans and operational and financial planning processes • Assist in procurement and recruitment processes • Assist in the preparation of payments requests for operational expenses, salaries, insurance, etc. against project budgets and work plans • Follow-up on timely disbursements by UNDP CO • Receive, screen and distribute correspondence and attach necessary background information • Prepare routine correspondence and memoranda for Project Manager's signature • Assist in logistical organization of meetings, training and workshops • Prepare agendas and arrange field visits, appointments and meetings both internal and external related to the project activities and write minutes from the meetings • Maintain project filing system and any necessary records for e.g. project equipment inventory • Perform any other duty relevant to the assignment
Competencies
<ul style="list-style-type: none"> • Bookkeeping skills • Administration skills • Good organizational skills
Required Skills and Experience
Education: <ul style="list-style-type: none"> • A degree and/or professional qualification in accountancy

- PRINCE2 certificate an advantage

Experience:

- At least 5 years of administrative and/or financial management experience;
- Demonstrable ability to administer project budgets, and track financial expenditure;
- Demonstrable ability to maintain effective communications with different stakeholders, and arrange stakeholder meetings and/or workshops;
- Excellent computer skills, in particular mastery of all applications of the MS Office package, in particular Excel; mastery of other finance applications is a plus;
- Prior UNDP/GEF project experience and knowledge of UNDP and GEF procedures and guidelines is an advantage.

Language:

- Fluency in written and spoken French.
- Skills in English an advantage.

Field Activity Coordinator x 2 – one in each project zone

Background

The Regional Manager has responsibility to for delivering the regional aspects of the project at one of the two project sites (BdM or MdO). The Regional Managers will be housed within existing DREDD regional offices. For the particular case of the BdM which falls over two DREDD regions, the Regional Manager will be seated with the Central West DREDD office but maintain close communication (e.g. copying any written exchanges within DREDD to) the Mouhoun DREDD office.

Duties and Responsibilities

- Supervise and coordinate the production of project outputs in the region, as per the project document, working closely with the National Project Manager
- Mobilize all project inputs in accordance with UNDP procedures for nationally executed projects
- Supervise and coordinate the work of all regional project staff, consultants and sub-contractors
- Coordinate the recruitment and selection of project personnel at regional level
- Input to and/or prepare and revise project work and financial plans, as required by UNDP, in close cooperation with the National Project Manager
- Liaise with partners at the regional level for effective coordination of all regional project activities
- Contribute to the production and timely submission of the Inception Report, Combined Project Implementation Review/Annual Project Report (PIR/APR), Technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF, and other oversight agencies
- Perform any other duty relevant to the assignment

Competencies

- Experienced field project manager
- Financial management and control capabilities
- Advanced leadership, negotiation and communication skills
- Sensitive to context of the project and considerable understanding of the region (either MdO or BdM)

Required Skills and Experience

Education:

- Minimum MA or MSc in Social or Environmental Sciences, International Development, or related

- Demonstrable background in Ecosystem Based Adaptation and related Climate Change and Natural Resource Management issues as asset
- PRINCE2 certificate an advantage

Experience:

- Minimum 7 years' experience in project management, of which 5 years is in a sub-national context, ideally in the project location (MdO or BdM)
- Prior UNDP/GEF project experience.

Language:

- Fluency in written and spoken French.
- Skills in English an advantage.

Field technical experts in planning, monitoring and evaluation x 2

Background

The Regional expert in planning, monitoring and evaluation will be responsible for backstopping the Regional Manager of his or her respective region, particularly on planning, monitoring and evaluation issues, as well as Ecosystem-based Adaptation. He is she will also act as the deputy manager at regional level.

Duties and Responsibilities

- Advise the Regional Manager on the technical aspect of the projects to ensure effective project implementation in-line with the formally approved project document in order to achieve the stated project outcomes and outputs
- Provide strategic and technical guidance to the Regional Manager on the implementation of the project, as well as to fulfill all required technical progress and reporting
- Perform any other duty relevant to the assignment

Competencies

- Experienced technical specialist
- Leadership, negotiation and communication skills
- Sensitive to context of the project
- Advanced technical writing and reporting skills

Required Skills and Experience

Education:

- Minimum MA or MSc in Natural Resources Management or equivalent, with demonstrable background in Ecosystem Based Adaptation and related Climate Change and Natural Resource Management issues
- PRINCE2 certificate an advantage

Experience:

- Minimum 5 years' experience in sub-national projects in natural resources management in multi-stakeholder settings, in particular concerning Climate Change, of which 3 years as a technical advisor related to planning, monitoring and evaluation.
- Experience in the region of BdM or MdO.

Language:

- Fluency in written and spoken French.
- Skills in English an advantage.

Jumelage Team

Background

A key barrier in achieving key environmental management results is a lack of experienced human resources. On the other hand, especially in Africa, we experience that we have a large pool of young professionals, often with University degrees, who are not able to find formal employment in their chosen careers and who find it particularly difficult to get entry level practical work experience.

During the project design of the Burkina Faso EBA project it was identified that a well-designed young professional “*jumelage*” (or “twinning”) approach would add value not only to the explicit support of young professionals, but also to project implementation per se.

The approach implies that technical teams of a matched international and Burkinabe young professionals (the “twins”) will be established and paired up during the project lifetime with specific TORs that contribute to project implementation as well as capacity building objectives.

Key benefits

Key benefits would include:

- Providing learning and professional development experiences for Burkinabe and international young professionals
- Broadening the pool of young professionals with project implementation and administration expertise
- A larger pool of technical staff that can implement project implementation especially on the site level
- Longer-term and more continuous outreach and engagement with local communities on practical EBA and other adaptation actions through a team of young professionals
- Support to local level M&E activities that can be integrated into the work of the *Jumelage team*

Team Working Themes

Team 1: Mapping of resources, contributions to GIS, contributions to M&E and local resource tracking systems at MdO and BdM

Key deliverables of Team 1 would include:

- Support the SICOFORMO information system at DCIME through local level mapping of resources at MdO and BdM, including for ground-truthing purposes
- As appropriate integrate such information for the updating of project relevant risk and vulnerability assessments for the MdO and BdM sites, and support these assessments
- Establish/document baseline assessments prior to EBA interventions at both the MdO and BdM sites
- Help set up participatory monitoring and evaluation system of EBA interventions implementation and impact on site
- Help integrate relevant information into a GIS based monitoring system
- Work closely with regional project staff and partners, and engage in professional exchanges and joint project implementation

Team 2: Community engagement and support at MdO

Key deliverables of Team 2 would include:

- Co-facilitation of the development of local level adaptation plans with project staff, partners and most importantly local communities at MdO (in support of Outcome 2)
- Support the conducting of the community and regional level stakeholder information needs

- assessment, including gender and cultural specificities as foundation for developing relevant aspects of the project communication plan (see output 1.2)
- Assist in implementation of the local level adaptation plans, including through particularly facilitating gender and cultural specificities, and linked to the relevant outputs under outcome 2

Team 3: Community engagement and support at BdM:

Key deliverables of Team 2 would include:

- Co-facilitation of the development of local level adaptation plans with project staff, partners and most importantly local communities at MdO (in support of Outcome 2)
- Support the conducting of the community and regional level stakeholder information needs assessment, including gender and cultural specificities as foundation for developing relevant aspects of the project communication plan (see output 1.2)
- Assist in implementation of the local level adaptation plans, including through particularly facilitating gender and cultural specificities, and linked to the relevant outputs under outcome 2

Generic elements in the TOR for all Young Professionals

Generic TOR elements for all Young Professionals include:

- Participate in planning and orientation “campus” week to learn about the project background and context
- Design concept for each team working theme as twin-team and in liaison with the other twin-teams
- A workplan will be developed and agreed to – and tracked by the twin-team as well as their mentor who provides feedback on technical aptness as well as implementation success
- Field implementation is a critical aspect of this work, and extended on-site periods are foreseen
- Technical reports, linking to project deliverables such as M&E requirements are to be produced by the twin-team
- Regular twin-team meetings for all twin-teams will be conducted to foster peer review and learning; presentations will be given and provided feedback on
- Twin-team members agree to a mutual and vice-versa mentoring responsibility and agree on certain competencies that they will share with their twin during the project period
- Each team works in close collaboration with the project implementation team, and may be placed under the supervision of relevant staff in addition to the mentor

Detailed TORs for the twin-teams should be developed, but must integrate technical and administrative aspects of the projects design. International young professionals should be fluent in French, speaking and writing in English is an added advantage for UNDP and GEF operational and reporting and needs.

Suggested fields of technical expertise: ecology, hydrology, agriculture, rural development, economics, social sciences, community outreach, gender and cultural engagement

Mentorship arrangement

Oversight and guidance of the *Jumelage* program will be the responsibility of a senior international officer, employed by the project.

The TORs for the mentorship component include:

- Help develop detailed *Jumelage* program
- Develop detailed TORs for twin-teams
- Organise planning and orientation “campus” for twins
- Support twin-teams in developing their workplans
- Ensure linkages to overall project plan and staff

- Provide regular performance checks and feedbacks, both on administrative and technical aspects, but also on career development
- Review all reports produced and provide feedback for improvement
- Organise a twin-team show-case seminar, during which all teams can report on their experiences to national (and potentially international) stakeholders.

Budget notes

Senior Mentor (IC - fulltime): \$100K p.a. (estimates with travel costs and insurance lumped)

Young professionals (6 positions): \$1,000 p.m per YP; i.e. \$72K p.a. (+insurance and travel), estimated at \$91K bulk p.a.

All operational costs for 4.5 years included in the project as a budget reserve at \$859,5K in total (budget line 12)

Annex 8: Summaries of Technical Reports from PPG phase

This section provides a summary in English of each study carried out during the PPG phase (available from UNDP Country Office).

Study 1: Natural Resource Management / synthesis report (by Dr. Fidèle HIEN)

This study, which is also the report of the national team leader, provides an overview of the team's findings and consolidate the analysis. This thematic feasibility study on NRM especially related to the work of the hydrologist and agro-sylvo-pastoral systems consultants. In brief, the report confirms stakeholder demand for the project, and the good fit with existing institutional frameworks at sub-national levels.

Study 2: Hydrologic systems (by Ludovic KAMSIÉ)

This study described the important hydrological aspects of the sites and the project. It provides a précis of the impacts of climate change expected on these systems, and highlights hydrology-related specific adaptation and resilience building activities proposed for the implementation phase of the project.

On the basis of the site descriptions and recommendations, the author recommends:

- The expansion or construction of *boulis* in the immediate vicinity of the MdO and allowing BdM watering in the intermediate zones of before access to the river or pond animals between the end of the rainy season and February. Such a development should supplement the early use of water resources of the river and ponds and may offer opportunities for actions in favor of women (creating versatile gardens).
- Improved drinking water to people by strengthening water points in the villages of the MdO (rehabilitation and implementation of new drilling to reduce the population's dependence on ponds and the river, and to provide drinking water and reduce diseases from the use of dirty water).

This study linked closely and fed into the NRM study, as well as the agro-sylvo-pastoral systems study.

Study 3: Climate change modeling (by Ulrich DIASSO, University of Cape Town Climate Sciences Analysis Group)

The aim of this study is to provide a better understanding of national and localized potential effects of climate change on the agro-ecological and hydrological systems level. Within the analysis of the general climate change, it appears that two project zones emphasized by the project (MdO and BdM) show the country's highest average temperatures, which leads to a rapid increase in evapotranspiration and ecosystem imbalances. The study used projections from eight model outputs ('forcing' with 8 General Circulation Models, GCMs) to study the evolution of the average, minimum and maximum temperature and their impacts on precipitation, evapotranspiration and total runoff as well as spatial scales multi-decadal, seasonal and decadal time over the period 2021-2060.

At the national level, all of the models unanimously indicate a rising average temperatures. Regarding precipitation, trends shown by the models are diverse, i.e. there was no consensus among the models as to the actual impact of this increase in temperature. At the level of the two EBA project zones, the study found that both sites will experience temperature increases. There is also an expected decrease in the number of days of rainfall, plus an increase in evapotranspiration potential, which could lead to disruptions in the water balance.

Study 4: Information technology (by Louis Blanc TRAORE)

This study provides a summary of the current IT situation with regards to the project. It provides considerable detail on the IT-related context (including capacities) of the project and proposes on this basis the SICOFORMO system in response. It also proposes a triangulated data management system, which builds the capacity of regional hubs and strengthens existing focal points within the RIDEB network. The Annex of this study responds specifically to GEF Council members' comments on the ICT aspects of the project.

Study 5: Agro-sylvo-pastoral systems (by T. Michel KABORÉ)

This study provides great detail on the important agro-sylvo-pastoral aspects of the sites and the project, mentioning the role of women. It provides a summary of the vulnerability and resilience at each zone, noting key findings from the fieldwork and mentioning promising resilience-building initiatives. The report also highlights specific adaptation and resilience building activities proposed for the implementation phase of the project. In brief, the project areas have very different characters. In view of the status of ecosystems and climate change trends in both areas, the local communities have identified project activities during field consultations to ensure the preservation of natural and social assets thereof. They include land reclamation around lake Oursi, bank protection in MdO and BdM, dune fixation in MdO and other measures e.g. to improve productivity particularly for women's income generating activities. This study linked closely and fed into the NRM study, as well as the hydrology study.