

**Activity 2.4.2:** Promote application of short-cycle varieties e.g. raise awareness about relevant short cycle varieties and cultivars; provide training for application

**Activity 2.4.3:** Support the construction of storage systems and infrastructure for harvests

**Activity 2.4.4:** Undertake study that identifies possibilities for improving market access for short cycle produce for local farmers, breeders and fishermen.

### **OUTCOME 3: LESSONS LEARNED AND BEST PRACTICES FROM PILOT ACTIVITIES, CAPACITY DEVELOPMENT INITIATIVES AND POLICY CHANGES DISSEMINATED.**

114. **Baseline:** In the baseline no specific mechanism for disseminating and sharing information on adaptation experiences exists in Benin. Although some pilot projects such as the GTZ and IRDNC support initiatives have generated some excellent local level knowledge, such knowledge is not readily accessible and tapped by practitioners and affected people. Adaptation knowledge and experiences will remain ad hoc and will not find their application in a wider and systematic manner.

115. **Adaptation Alternative:** A dedicated Communication and Awareness Strategy will be developed and implemented to support learning and exchange beyond the lifetime of this particular project and serve the needs of other similar initiatives currently underway or likely to emerge in the future.

116. A major part of the strategy will be to document and disseminate lessons learnt from the pilot intervention, however there is space to also integrate other adaptation knowledge from within Benin and internationally (i.e. through the ALM) to the envisioned information sharing or clearing house mechanism. The MEPN, which will be the host of a newly improved website with a strong emphasis on adaptation, will have an increased capacity in serving the nation as an adaptation information hub.

117. Lessons learnt that will be generated from this project are manifold and will address interests also from countries abroad. By regularly updating and participating in the ALM, Benin will add to the international base of best practice on adaptation, so urgently needed to build adaptive capacity especially throughout Africa.

118. Co-financing amounts for Outcome 3:

Cash: US\$ 150,000  
LDCF Project Grant Requested: US\$ 330,650

119. **Output 3.1: Communication and Awareness Strategy (CAS) in place and implemented**

**Activity 3.1.1:** Assess information and communication needs of key target groups (link also to output 1.3) (incl. for pilot sites, national coverage, local level, national level, farmers, fisherman, nomads, policy makers, high level decision makers, business community, public)

**Activity 3.1.2:** Design targeted CAS and implement it

**Activity 3.1.3:** Implement CAS M&E

120. **Output 3.2: A project web site is developed and regularly updated**

**Activity 3.2.1:** Assess existing information portals and websites (SWOT) to identify best suitable portal options (building on existing one or designing new portal); identify institutional home (i.e. MEPN, link to MAEP)

**Activity 3.2.2:** Based on information needs assessment (see output 3.3.) develop concept for web portal

**Activity 3.2.3:** Commission expert company for portal development; consider international tenders

**Activity 3.2.4:** Train staff at host institution (e.g. MAEP or MEPN) in content management and web maintenance

121. **Output 3.3: Lessons learned are documented and disseminated**

**Activity 3.3.1:** Develop guidelines for the documentation and codification of lessons learnt, best practices, and experiences that did not work

**Activity 3.3.2:** Systematically e.g. through M&E component and special studies document lessons learnt

**Activity 3.3.3:** Publish a booklet on best/worst practices (in French and English, and translated into local languages)

**Activity 3.3.4:** Develop and implement dissemination strategy for all products

**Activity 3.3.5:** Conduct a series of seminars on knowledge generated from Project

**Activity 3.3.6:** Share knowledge with international community e.g. through UNDP Adaptation Learning Mechanism (ALM)

#### 2.4. Key indicators, risks and assumptions

122. The proposed project indicator framework follows the UNDP M&E Framework for Adaptation. A It is aligned with the indicator framework of Thematic Area 1 on Agriculture and Food Security. Objective level indicators and outcome level indicators are specified. The project results framework in section 3 further elaborates the realisation of the indicators.

**Project Objective :** To strengthen capacities of agricultural\* (incl. cropping, livestock husbandry and fisheries) communities to adapt to climate change in four vulnerable agro-ecological zones in Benin.

**Indicator:** *Percentage change in vulnerability of agriculture (incl. animal husbandry), fisheries and food security sectors to climate risks via perception-based survey (VRA)*

**Outcome 1:** Capacity to plan for and respond to climate change in the agricultural sector improved.

**Indicator:** *Number of development planning and agriculture/fisheries related policies, programmes and plans incorporating climate change risks into their design*

**Outcome 2:** Risk of climate induced impacts on agriculture productivity reduced

**Indicator:** *Number of farmers (incl. pastoralists) and fishermen engaged in capacity development activities for climate change risk management*

**Indicator:** *Percentage change in adaptive capacity in demonstration villages*

**Outcome 3:** Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes disseminated.

**Indicator:** *Number of lessons learned codified as relating to all three project outcomes*

123. The project design further foresees the development of more specific M&E tools, especially also at the local implementation level. Participatory local level M&E can be a powerful management and communication tool, especially tracking and demonstrating project results in village level interventions. It is foreseen that a more detailed M&E project framework be developed during the project inception phase.

124. An overall project M&E plan has been devised and is included in the respective section of the project document below. It foresees the regular progress reporting, a well as audits, a mid-term evaluation and an end of project evaluation.

125. Assumptions underlying the project design include that:

1. the pilot Communes and other in the design and implementation arrangements implicated structures are willing to participate in the project and take responsibility for implementation;
2. up-scaling and replication of well working adaptation measures will be taking pace in a self-propelled manner;
3. through the project sufficient adaptation capacities will be build to ensure sustainability of project activities beyond the projects' time horizon.

126. A complete Risk Log is included in Annex 1 of the project document. It includes risks identified in the PIF (see below) as well as newly identified risks. Additional barriers are included in the Barrier section above and are generally represented by the below specified risks. Most risks are organisational in nature, and mainly relate to currently relatively low institutional and individual capacities of the public service structure in terms of adaptation. In summary the following ten key risks were identified:

1. Insufficient qualified human resources (Organisational)
2. Adaptation technologies costs and maintenance (Financial)
3. Appropriation of adaptive technologies by communities (Organisational)
4. Cultural and social resistance (Organisational)
5. Delays in funding disbursement and administrative slowness (Financial)
6. Occurrence of Natural Disasters: storms, flooding, earthquakes (Environmental)
7. Low Institutional/ Execution Capacity (Organisational)
8. Implementation arrangements dependent on institutional capacities (Organisational)
9. Lack of Government Commitment (Political)
10. Difficulties in agreeing on Strategic Vision, Planning and Communication (Strategic)

127. Mitigation measures for each risk are specified in the Risk Log (Annex 1), and have been systematically addressed in the project design.

## 2.5. Cost-effectiveness

128. Project implementation will be largely undertaken by existing Government structures, which will receive capacity building and investment support to start off on climate change risk and adaptation planning, budgeting and piloting village and commune based adaptation approaches. Commune level co-financing has been solicited to demonstrate commitment and it is envisaged that future adaptation costs will be successfully integrated into ongoing development budgeting. This approach is believed to be particularly cost-effective.

129. Alternative implementation arrangements were considered, including a higher number of project staff and national and international consultants in the design. This alternative has not been further elaborated as it carries higher short-term costs and will generate less long-term sustainability.

130. The MEPN has committed a significant amount of cash co-financing to directly gain ownership of the intervention. CO-financing of project management structures is envisaged, amongst other.

131. Table 2 provides a summary overview of the available co-financing.

**Table 2: Co-financing plan**

Zone/Ministry	Commune	In Kind US\$	Cash US\$	Total US\$	Description
Zone 1: Extreme North	Malanville		6,000	6,000	Cash: Office space, communications, Facilitation of Commune Technical Committees
Zone 4: West Atacora – Donga North	Ouake	24,042	10,000	34,042	
	Materi	65,573	15,000	80,573	In kind: Support to outreach to communities; implementation of CCA PTA throughout communities
Zone 5: Central Cotton Zone	Savalou	125,641	20,000	145,641	
	Aplahoue	814,077	150,000	964,077	
Zone 8: Fisheries Zones	Bopa	715,400	25,000	740,400	
	Adjohoun	308,686	100,000	408,786	
	Ouinhi	41,100	15,000	56,100	
	So Ava	n/a	n/a	n/a	
MEPN		4,114,381	830,000	4,944,381	Cash: For additional support to establish agro-meteorological observatories and training;

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					and misc. expenses CAS implementation Office rental and equipment; M&E and Communications expert  In kind: Support to policy and budget process; hosting of GTA and GTZA Community level CBNRM activities, such as reforestation and ecosystem services rehabilitation
UNDP			500,000		Project support management including project vehicle, staff salaries. Grant to outcome 2 (adaptation measures at village level)
<b>TOTAL</b>		<b>6,208,900</b>	<b>1,671,000</b>	<b>7,879,900</b>	

## 2.6. Sustainability

132. The project addresses key national development priorities spelled out in the PRSP and the UNDAF as well as identified and specified through the participatory and bottom-up NAPA process. The project has strong government support as well as buy-in at the commune and village level. Consequently, a high commitment to carry out project activities and to mainstream adaptation into long-term policies, plans, and national budgets is given. As the project interventions at the local level are needs driven, a high level of sustainability and absorption of adaptive capacity is also foreseen.

133. Capacity building is key to the approach of the design. Government institutions will be strengthened to be able to deal with climate change risk and adaptation needs. Especially DICAF, the MAEP's training institution, responsible for training of all staff including at the decentralised agricultural Centres, will be positioned to emerge as national competent training authority on adaptation in the agricultural and food security context.

134. On the local level climate resilient agricultural/fisheries practices that can and will be developed into economic livelihood opportunities will be implemented, providing financial incentives to the local population. Additionally, losses to climate change risks will be limited through improved information in support of farmers' decision making, will provide additional incentives to maintain the established EWS.

## 2.7. Replicability

135. The design of the project intervention specifically addresses replicability, described in the following:

136. *Focus on pilot approach: 4 agro-ecological zones, nine Communes and nine demonstration villages:* As the first NAPA follow-up project in Benin, project activities are piloting in nature and must be restricted to a focused and tangible set of activities in pilot areas. The by the NAPA as most vulnerable identified four agro-ecological zones (Zones 1, 4, 5 and 8) have been selected to produce initial adaptation learning. Within in agro-ecological zone a selected number of Communes has been identified as pilot partners for the project (Zone 1 - 1 Commune, Zones 4 - 2 communes and zones 5 - 3 Communes each, Zone 8 - 3 Communes). In each Commune one demonstration village per commune will be specifically supported by the project to establish their own adaptation programme and achieve demonstrable adaptation capacity.

*Up-scaling and replication through dual design and phased-approach:* More numerous villages in each commune will be reached through the commune level planning of adaptation activities, which will facilitated by communes and implementation partners in all/most villages of each commune. Through an

improve Commune wide research knowledge base, relevant to the entire Commune, a sound foundation for Commune wide planning is laid. Other communes will be able to benefit from the specific tools developed for climate change proofing policy and planning.

137. Following extensive stakeholder consultation, the agreed approach is to set out in the first nine communes during the first phase, whilst up-scaling to the other seven communes during the second phase. It is specified in the budget that allocations for community outreach work is almost doubled because during the second phase when new communes are added, the work in the initial nine villages will continue. It is recognized that two years is often not enough time to demonstrate tangible adaptation results at the village level, especially since adaptation is a new concept and significant capacity building is necessary at all levels. It is envisaged that once the second phase proceeds, the communes in particular have increased capacity and practical experience to address on climate change and adaptation measures.

138. Once the demonstration villages are well on track (after an approximate project period of 2 years), specific support for up-scaling and replicating the local measures more intensely may be made. Provisions for peer learning activities are explicitly integrated into the project design.

139. *Knowledge sharing:* Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums including the UNDP Adaptation Learning Mechanism (ALM) that will largely function on the basis of an electronic platform. Further 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. A dedicated outcome has been integrated into the LDCF project design in this regards, and a percentage of project resources is already allocated for these activities.

## 2.8 Stakeholder involvement plan

140. A draft stakeholder involvement plan during project implementation is presented in Table 3. Final arrangements are to be verified during the project inception phase.

Table 3: Stakeholder involvement plan as per project output.

Output	Responsible	Stakeholders
Outcome 1: Capacity to plan for and respond to climate change in the agricultural sector improved.		
Output 1.1: Local and national development plans/strategies are climate change resilient / address climate change risks	Communes	<i>National level:</i> MAEP, MEPN, MEE, Directorate of Development Planning (DPP), Directorate of Environment (DGEV), Directorate of Water Management (DGEau), etc <i>Local level:</i> Communal Authority for Agricultural Production (Responsables Communaux de Production Agricole, RCPA), Mayors/Commune leadership, DDEPN (C/SPRN), Organisation des producteurs, NGO's, PTF Communes of : Malanville (Zone Extreme North), Materi and Ouake (Zone West Atacora-Nord Donga), Savalou, Aplahoue (Central cotton Zone), Quinhi, Bopa, Aphonliou and So Ava (Fisheries Zone)
Output 1.2: Commune and national and decentralised agricultural sector budgets incorporate allocations to the prevention and management of risks and impacts of variability and climate change	Communes	<i>National level:</i> MAEP, MEPN <i>Local level:</i> Communal Authority for Agricultural Production (Responsables Communaux de Production Agricole, RCPA), Mayors/Commune leadership, DDEPN (C/SPRN) Pilot Communes
Output 1.3: National strategy	Working Group on	<i>National level:</i> MAEP, MEPN, Council for

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for effective and efficient agro-meteorological service delivery to local farmers under implementation	Agro-meteorology (GTA)	Agriculture and Training (DICAF), INRAB, Meteorological Services (ASECNA), Ministère de la Communication, Radios locales et communautaires, Ministère de la Sécurité Publique (DPPC) NGOs etc. <i>Local level:</i> Communal Authority for Agricultural Production (Responsables Communaux de Production Agricole, RCPA), DDEPN (C/SPRN), Organisation des producteurs, NGOs, PTF Pilot Communes and demonstration villages
Output 1.4: Training programmes of technical services (national, departmental, local) and training, and research institutions integrate climate change risk and weather forecasting components	DICAF/MAEP	<i>National level:</i> MAEP, MEPN, Council for Agriculture and Training (DICAF), INRAB, Meteorological Services (ASECNA), Universités, NGOs etc <i>Local level:</i> RCPA, DDEPN (C/SPRN), Organisation des producteurs, NGOs, PTF, Communes des 4 zones agroéconomiques
Output 1.5: Climate change vulnerability and risk maps for the agricultural sector (crops and livestock) are developed for and applied in the 4 agro-ecological zones in which the project is piloted	INRAB/MAEP	<i>National level:</i> MAEP, MEPN, Laboratoire des Sciences du Sols et de l'Eau (LSSEE), INRAB, Centre National de Télédétection (CENATEL), Council for Agriculture and Training (DICAF), Meteorological Services (ASECNA), Directorate of Environment (DGENV.), Directorate of Water Management (DGEau), Direction de la Prévention des Pollutions et de la Gestion des Risques Environnementaux (DPPGRE), Ministère de la Sécurité Publique (DPPC) NGOs etc. <i>Local level:</i> RCPA, DDEPN (C/SPRN), Organisation des producteurs, NGOs, PTF, Communes des 4 zones agroéconomiques Pilot communes and demonstration villages
Outcome 2: Risk of climate induced impacts on agriculture productivity reduced at the community level		
Output 2.1: Nine pilot Communes (representing 4 agro-ecological zones) have annual adaptation plans and strengthened CCA support capacity to the community level in place	Communes	<i>Pilot Communes, decentralised Government services and other commune level representatives</i>
Output 2.2: Nine demonstration villages implement village adaptation plans	Communes	<i>Nine demonstration villages, pilot Communes, decentralised Government services and other commune level representatives</i>
Output 2.3: Adapted/ climate change resilient production (cultivation, animal production, fisheries) methods are tested in 8 demonstration villages	INRAB/MAEP Directorate of Fisheries DGFRN/MEPN	<i>Nine demonstration villages, pilot Communes, decentralised Government services and other commune level representatives</i>
Output 2.4: Networks for production and dissemination of short-cycle varieties of key crops in the 4 agro-ecological zone are set up and functional in pilot communes	MAEP (ONASA, ONS)	<i>National level:</i> MAEP, MEPN, Council for Agriculture and Training (DICAF), INRAB, Universités, NGOs etc <i>Local level:</i> RCPA, DDEPN (C/SPRN), Organisation des producteurs, NGOs, PTF, Communes des 4 zones agroéconomiques Pilot Communes and demonstration villages
Outcome 3: Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes disseminated.		
Output 3.1: Communication and awareness strategy (CAS) in	MEPN (PMU)	All relevant project stakeholders

place and implemented		
Output 3.2: A project web site is developed and regularly updated	MEPN (PMU)	MEPN, MAEP, all stakeholders/ the public
Output 3.3: Lessons learned are documented and disseminated	MEPN (PMU)	All relevant project stakeholders

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### 3. Project Results Framework

This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:

5. The capacity of local communities in terms of environmental conservation and an improved adaptation to climate change are developed.

5. Les capacités des communautés locales sont développées en vue de la préservation de l'environnement et d'une meilleure adaptation aux changements climatiques.

**Country Programme Outcome Indicators:**

**Indicator :** 5.1.1 Number of strategy documents and PDCs that intergrades the climate change problematic; the rate of harvest losses due to climate impacts

**Baseline:** No PDCs integrates climate risks; **Target:** 20%

**Indicateurs:** 5.1.1 Nombre de documents de stratégies et de PDC ayant intégré la problématique des changements climatiques, Taux de pertes des récoltes dus aux aléas climatiques

**Situation de référence:** 5.1.1 0% pour les PDC et les autres documents comme la SCRIP) aucune stratégie Cibles: 5.1.1 :20%

**Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one):** 1. Mainstreaming environment and energy OR

2. Catalyzing environmental finance OR 3. Promote climate change adaptation OR 4. Expanding access to environmental and energy services for the poor.

**Applicable GEF Strategic Objective and Program:**

**Applicable GEF Expected Outcomes:**

**Applicable GEF Outcome Indicators:**

Project Objective <sup>31</sup> : To strengthen capacities of agricultural* (incl. cropping, livestock husbandry and fisheries) communities to adapt to climate change in four vulnerable agro-ecological zones in Benin.	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Outcome 1 <sup>32</sup> : Capacity to plan for and respond to climate change in the agricultural sector improved.	Percentage change in vulnerability of agriculture (incl. animal husbandry), fisheries and food security sectors to climate risks via perception-based survey (VRA)	Need to undertake VRA at project onset (9 demonstration sites)	At mid-term 35% increase of VRA score At end-of-project 70% of VRA score	Survey/VRA	<ul style="list-style-type: none"> <li>Insufficient qualified human resources</li> <li>Low Institutional/ Execution Capacity</li> <li>Delays in funding disbursement and administrative slowness</li> </ul>
	Number of development planning and agriculture/fisheries related policies, programmes and plans incorporating climate change risks into their design Budget/resources allocated to national and local strategies for the prevention of risk	Currently climate change risk is not explicitly integrated into PDCs, PRSP, and the Agricultural Revival Strategy	By the end of project the PDCs in nine pilot Communes all integrate climate change risk into their design The PSRP specifically includes climate change risk The Agricultural Revival Strategy specifically includes climate change risk Specific budget is allocated within local development plan for the prevention of risk	<ul style="list-style-type: none"> <li>APRS</li> <li>Assessment of targeted policy instruments</li> <li>Budget review for each commune</li> </ul>	<ul style="list-style-type: none"> <li>Difficulties in agreeing on Strategic Vision, Planning and Communication</li> <li>Government Commitment</li> <li>Implementation arrangements dependent on institutional capacities</li> <li>Lack of systemic capacity, tools and methods to address CCA systematically in planning and implementation</li> <li>Lack of capacities to develop and establish functional and sustainable farmers agro-meteorological EWS</li> <li>Mismatch between traditional versus</li> </ul>

<sup>31</sup> Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR

<sup>32</sup> All outcomes monitored annually in the APR/PIR. It is highly recommended not to have more than 4 outcomes.



<p>scientific knowledge and systems</p> <ul style="list-style-type: none"> <li>Financial resource allocated to commune is weak</li> </ul>					<p>Outcome 2: Risk of climate induced impacts on agriculture productivity reduced</p>
<ul style="list-style-type: none"> <li>Adaptation technologies costs and maintenance</li> <li>Appropriation of adaptive technologies by communities</li> <li>Cultural and social resistance</li> <li>Occurrence of Natural Disasters: storms, flooding, earthquakes</li> <li>Implementation arrangements dependent on institutional capacities</li> <li>Lack of community level support and local adaptive capacities</li> <li>Bottlenecks in extension service delivery</li> <li>Lack of understanding and knowledge of CCA needs, options and best practices and limited capacity building support and up-scaling</li> <li>Mismatch between traditional versus scientific knowledge and systems</li> </ul>	<p>1. APRs; Training event reports 2. Survey</p>	<p>1. By mid-term at least 150 farmers and fishermen in 9 demonstration villages have been trained By the end of the project a total of 450 farmers and fishermen in the four agro-ecological zones have been trained 2. At end-of-project 70% of population in demonstration villages have good adaptive capacity 3. will be based upon baseline survey undertaken (inception workshop should clarify so)</p>	<p>1. At 9 demonstration sites currently no dedicated climate change risk management training ongoing; baseline is thus zero 2. Need to undertake baseline survey at project onset (9 demonstration sites)</p>	<p>1. Number of farmers (incl. pastoralists) and fishermen engaged in capacity development activities for climate change risk management 2. Percentage change in adaptive capacity amongst demonstration villages via perception-based survey 3. Number of resilient agro-pastoral technologies or techniques demonstrated at the local level upon project closure</p>	<p>Outcome 3: Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes disseminated</p>
	<p>APR</p>	<p>At least 10 lessons learned per outcome codified</p>	<p>No lessons learned codified</p>	<p>Number of lessons learned codified as relating to all three project outcomes</p>	
	<p>APR</p>				

4. Total budget and workplan

Award ID:	00069395	Project ID(s):	00074252
Award Title:	Climate Change Resilient Agricultural Production and Food Security in Benin		
Business Unit:	BEN 10		
Project Title:	Climate Change Resilient Agricultural Production and Food Security in Benin		
PIMS no.	4047		
Implementing Partner (Executing Agency)	MEPN; Communes		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See Budget Note:
Outcome 1 : Capacity to plan for and respond to climate change in the agricultural sector improved.	MEPN	62160	(LDCE)	71300	Local Consultants	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 3,250	\$ 45,250	a
				71400	Contractual Services	\$ 25,000	\$ 25,000	\$ 25,000	\$ 0	\$ 0	\$ 75,000	b.
				71600	Travel	\$ 30,000	\$ 25,000	\$ 5,000	\$ 5,000	\$ 1,000	\$ 66,000	c.
				72200	Equipment and Furniture	\$ 20,000	\$ 20,000	\$ 0	\$ 0	\$ 0	\$ 40,000	d.
				72300	Materials and Goods	\$ 25,100	\$ 25,100	\$ 15,100	\$ 5,100	\$ 1,000	\$ 71,400	e.
				72500	Supplies	\$ 9,000	\$ 8,500	\$ 2,500	\$ 2,500	\$ 500	\$ 23,000	f.
				74100	Professional Services	\$ 40,000	\$ 35,000	\$ 27,500	\$ 27,500	\$ 5,000	\$ 135,000	g.
				74200	Audio-visual and Print Production Costs	\$ 12,500	\$ 12,500	\$ 10,000	\$ 10,000	\$ 0	\$ 45,000	h.
				sub-total GEF		\$ 172,100	\$ 161,600	\$ 95,600	\$ 60,600	\$ 10,750	\$ 500,650	
				Total Outcome 1		\$ 172,100	\$ 161,600	\$ 95,600	\$ 60,600	\$ 10,750	\$ 500,650	
Outcome 2 : Risk of climate induced impacts on agriculture productivity reduced at the	MEPN/Communes	62160	(LDCE)	71300	Local Consultants	\$ 22,500	\$ 22,500	\$ 22,500	\$ 22,500	\$ 8,750	\$ 98,750	i
				71400	Contractual Services	\$ 54,000	\$ 54,000	\$ 96,000	\$ 96,000	\$ 0	\$ 300,000	j.
				71600	Travel	\$ 46,500	\$ 46,500	\$ 77,000	\$ 77,000	\$ 9,000	\$ 256,000	k.

community level	Outcome 3 : Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes disseminated.	MEPN	62160	LDCF	72300	Materials and Goods	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 800	\$ 20,800	l.	
					72500	Supplies	\$ 62,500	\$ 62,500	\$ 120,750	\$ 119,950	\$ 800	\$ 366,500	m.	
					72600	Grants	\$ 180,000	\$ 180,000	\$ 233,000	\$ 233,000	\$ 0	\$ 826,000	n.	
					74100	Professional Services	\$ 78,000	\$ 88,000	\$ 118,000	\$ 116,000	\$ 20,000	\$ 420,000	o.	
					sub-total GEF		\$ 448,500	\$ 458,500	\$ 672,250	\$ 669,450	\$ 39,350	\$ 2,288,050		
					4000	UNDP	\$ 10,500	\$ 50,000	\$ 50,000	\$ 52,000	\$ 32,500	\$ 195,000	n.	
					sub-total UNDP		\$ 10,500	\$ 50,000	\$ 50,000	\$ 52,000	\$ 32,500	\$ 195,000		
					Total Outcome 2		\$ 459,000	\$ 508,500	\$ 722,250	\$ 721,450	\$ 71,850	\$ 2,483,050		
					71300		Local Consultants	\$ 10,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 10,000	p.
					71400		Contractual Services	\$ 65,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 20,000	\$ 235,000	q.
72300		Materials and Goods	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 500	\$ 6,500	r.					
73300		Rental & Maintenance of IT Equipment	\$ 500	\$ 500	\$ 500	\$ 500	\$ 150	\$ 2,150	s.					
74100		Professional Services	\$ 1,000	\$ 6,000	\$ 15,000	\$ 15,000	\$ 10,000	\$ 47,000	t.					
74200		Audio-visual and Print Production Costs	\$ 0	\$ 0	\$ 10,000	\$ 0	\$ 20,000	\$ 30,000	u.					
sub-total GEF		\$ 78,000	\$ 58,000	\$ 77,000	\$ 67,000	\$ 50,650	\$ 330,650							
Total Outcome 3		\$ 78,000	\$ 58,000	\$ 77,000	\$ 67,000	\$ 50,650	\$ 330,650							
62160		LDCF	\$ 10,000	\$ 10,000	\$ 11,000	\$ 11,000	\$ 5,000	\$ 47,000	v.					
71600		Travel	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000	\$ 1,500	\$ 25,500	w.					
72300		Materials and Goods	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000	\$ 2,150	\$ 26,150	x.					
72500		Supplies	\$ 0	\$ 5,000	\$ 0	\$ 5,000	\$ 0	\$ 10,000	y.					
71300		Local Consultant	\$ 0	\$ 0	\$ 35,000	\$ 0	\$ 35,000	\$ 70,000	y.					
71200		International Consultant	\$ 2,000	\$ 2,000	\$ 2,000	\$ 3,000	\$ 3,000	\$ 12,000						
74500		Miscellaneous Expenses	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 0	\$ 100,000	z.					
71300		Local Consultant	\$ 49,000	\$ 54,000	\$ 85,000	\$ 56,000	\$ 46,650	\$ 290,650						
sub-total GEF		\$ 49,000	\$ 54,000	\$ 85,000	\$ 56,000	\$ 46,650	\$ 290,650							

4000	UNDP	71300	Local Consultant	\$0	\$0	\$0	\$0	\$25,000	\$25,000	z
		72200	Equipment and Furniture	\$49,500	\$10,000	\$8,000	\$2,500	\$80,000	\$80,000	aa
4000	Gov	71300	Local Consultant	\$40,000	\$40,000	\$40,000	\$40,000	\$200,000	\$200,000	ab
		Sub total UNDP			\$89,500	\$50,000	\$48,000	\$67,500	\$305,000	
4000	Gov	74500	Miscellaneous Expenses	\$25,800	\$25,800	\$25,800	\$25,800	\$129,000	\$129,000	
		Sub total Government			\$25,800	\$25,800	\$25,800	\$25,800	\$129,000	
Total Management			\$164,300	\$129,800	\$160,800	\$139,950	\$724,650			
PROJECT TOTAL			\$873,400	\$857,900	\$1,055,650	\$978,850	\$273,200	\$4,039,000		

\* MEPN will finance a position for a M&E and Communications expert in the Project Management Unit, as well as office space from its cash contribution

Summary of Funds:

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5*	Total
GEF	\$747,600	\$732,100	\$929,850	\$853,050	\$147,400	\$3,410,000
PNUD	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$500,000
MEPN (cash)**	\$245,000	\$245,000	\$180,000	\$180,000	\$0	\$850,000
MEPN (in-kind)	\$1,234,314	\$1,234,315	\$822,876	\$822,876	\$0	\$4,114,381
Communes (cash)	\$102,300	\$102,300	\$68,200	\$68,200	\$0	\$341,000
Communes (in-kind)	\$628,286	\$628,386	\$418,973	\$418,974	\$0	\$2,094,619
TOTAL	\$3,057,500	\$3,042,101	\$2,519,899	\$2,443,100	\$247,400	\$11,310,000

\*By Year 5 adaptation expenses are mainstreamed into commune and national budgets

33 Summary table should include all financing of all kinds: GEF financing, co-financing, cash, in-kind, etc...

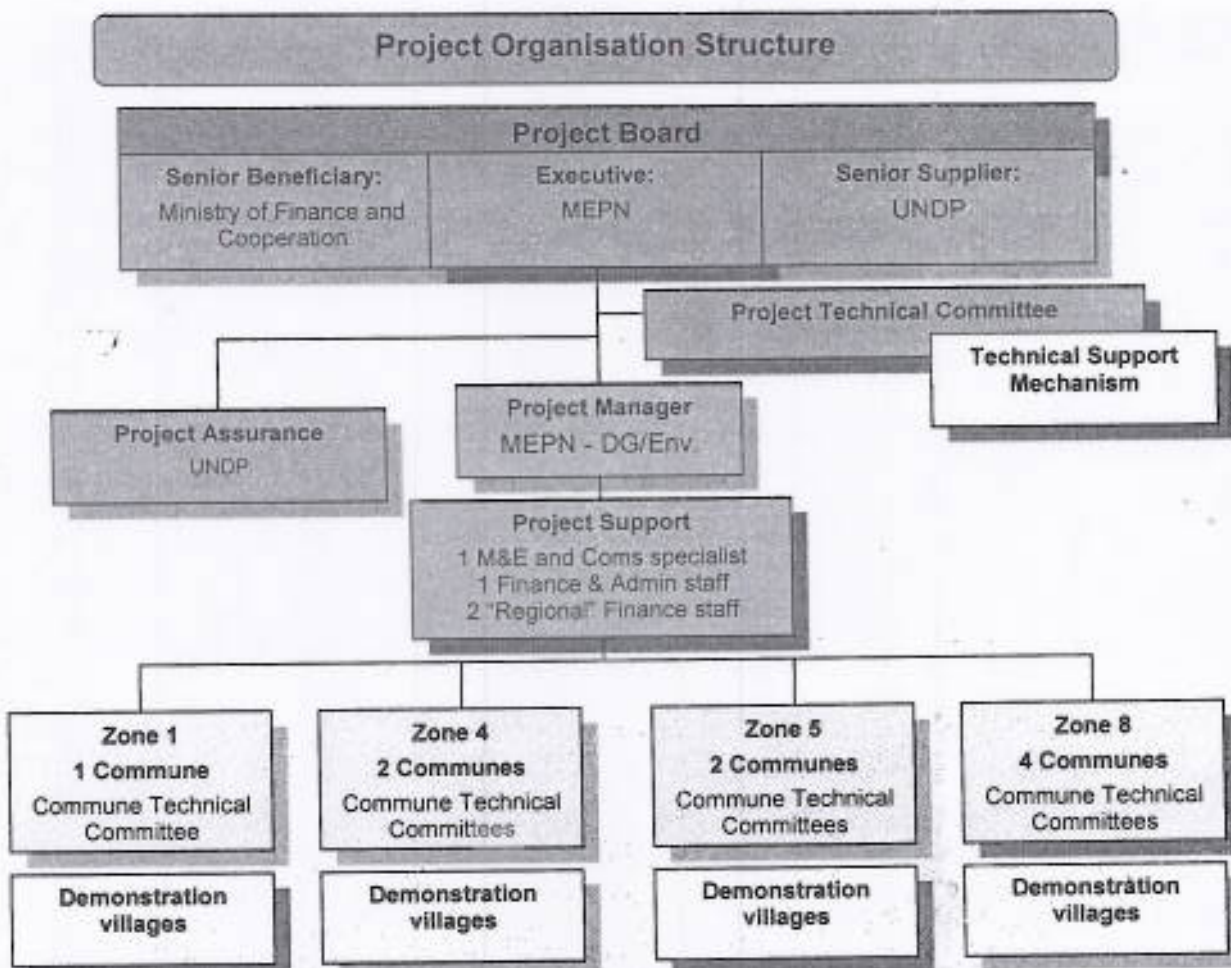
Budget Note	Description of cost item
a.	Fees for local consultant to manage outcome 1 and provide technical inputs, responsible for facilitating the technical work relating to CC proofing development planning instruments and budgets; coordination of technical work of teams to set up EWS, vulnerability maps etc.; training consultant to assist with DICAIF CCA training framework. Incentives for local decentralized services (MEPN/CCPA) to support project implementation. 2 agents/communes/9 communes (300 US/year/pers)
b.	Technical support for (i) budget and financing guidance and methods development and testing; (ii) vulnerability map development, (iii) EWS development and implementation
c.	Transportation to pilot communes and within communes; extension officers from MAEP and MEPN, as well as commune staff will receive travel support; transportation for technical teams to field sites (e.g. EWS, vulnerability maps)
d.	Investments into computer hard and soft ware for EWS; other equipment needed to establish functional EWS incl. functional communication system
e.	Communication and training materials
f.	Stationery and consumables; office supplies and materials
g.	Consultative meetings for CC proofing development planning processes and instruments incl. budgets; meetings in 9 pilot Communes and at the national level; training workshops on CC risk mapping and modelling; workshops on EWS and vulnerability map development (technical and consultative) in four agro-ecological zones; training workshops and events to implement training plan with DICAIF
h.	Development of certain priority products from the vulnerability mapping and EWS (seasonal calendars for farmers; weather forecast bulletins; radio slots). Supplemented by budget allocations under budget note q, the CAS
i.	Fees for local consultant to manage outcome 2 and provide technical inputs; facilitate work at Commune level and coordinate work of extension officers from MAEP and MEPN, as well as commune staff. Incentives for local decentralized services (MEPN/CCPA) to support project implementation. 2 agents/communes/9 communes (300 US/year/pers)
j.	NGOs and other technical support (i.e. from Technical Support Mechanism established under Project Technical Committee (PTC)) to facilitate adaptation actions in demonstration villages and communes; up-scale and replicate in additional 7 Communes/villages during phase 2 (years 3 and 4)
k.	Transportation to pilot communes and within communes; extension officers from MAEP and MEPN, as well as commune staff will receive travel support; transportation for technical teams to field sites; village to village visits
l.	Communication and material support to 9 Communes and demonstration villages; phase 2 up scaling to 16 Communes and villages
m.	Supplies, including for Farmers Action Research US\$ 4,000 per village in phase 1, and US\$ 3,000 per village in phase 2; Inputs needed: e.g. seeding and breeding material, etc. approx. US\$ 2,500 per village p.a.
n.	For village specific adaptation measures approximately US\$ 20,000 per demonstration village in phase 1 and US\$ 13,000 in phase 2. Investments into locally identified adaptation priorities such as rainwater harvesting, flood protection, water rehabilitation etc.; to be based on needs assessments (see Annex 4) and to be verified and planned for in early project establishment phase
o.	Commune level meeting of Technical Coordination Committees; training workshops and events esp. to implement farmers' capacity building plan; experience exchange workshops for representatives from pilot communes and demonstration villages
p.	Local Consultant to develop project Communication and Awareness Strategy (CAS) (incl. EWS communication elements)
q.	NGOs, experts and other technical support (i.e. from Technical Support Mechanism established under Project Technical Committee (PTC)) to implement CAS components (inclusive of production costs of materials such as pamphlets, community radio, community theatre, website etc.)
r.	Stationery and consumables; office supplies and materials
s.	Subscription costs of web portal
t.	Training on website content management and maintenance for MEPN staff; workshops on sharing lessons learnt from project; specific training events e.g. for the media
u.	Publication of lessons learnt brochures at mid-term and end-term of project (supplemented by CAS)

v.	Management related PMU travel
w.	Communication and other materials
x	Office supplies
y	mid-term and end-of project reviews with international experts, audit fees, terminal report
z	Project manager
aa	Office equipment and computers in Cotonou and in the 2 zone office. 1 project car for the project management, to be used by staff, consultants to go on field mission support
ab	Administrative staff of Project Management Unit (PMU) (Admin and Finance Manager = US\$ 15,000 p.a., Regional Financial Assistants (US\$ 10,000*2 = US\$ 20,000 p.a., Driver (US\$ 5,000 p.a.); MEPN will finance a position for a M&E and Communications expert in the Project Management Unit, as well as office space from its cash-co-financing contribution

## 5. Management Arrangements

141. The project will be implemented by the UNDP under its National Execution (NEX) Modality and Harmonized Approach to Cash Transfer (HACT) procedures. The project is a five year interventions from expected to run from 01 January 2010 to December 2014. The executing agency in Benin is the MEPN. The project will be executed in close collaboration with MAEP and the selected pilot communes, responsible for the local level pilot interventions of the project.

142. According to the capacity assessment (see Annex 3) is a competent execution partner, with the countries major climate change and adaptation mandate. The Ministry has a track record of successfully implementing programmes such as the GEF funded International Waters initiative and other donor support programmes. It is envisioned that the project team be housed at MEPN.



143. The Project Board is composed of the Executive, which will be represented by MEPN on behalf of the Government of Benin and is the Chair of the Board. The Senior Supplier, representing the interested of the donor is a senior representative of UNDP. The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Beneficiary will be the Ministry of Finance and Cooperation 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. The Project Board is responsible for making management decisions for a project in particular when guidance is required by the Project Manager.

144. 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.

145. 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. 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.

146. The Project Assurance role supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions, and will be held by a UNDP staff member.

147. The project will receive high level guidance and oversight from a Project Technical Committee (PTC), chaired by MEPN (or a designate). The project manager will serve as Secretary to the PTC. The composition of the SC will be inclusive of public and private sector representatives, representatives of research institutions, University, NGOs and civil society, as well as interested donors; where appropriate members of the National Climate Change Committee (CNCC) will be part of the SC. As the management of the project is overall overseen by the Project Board, the functions of the PTC will be primarily technically oriented. However, the PTC may recommend selected management decisions to the Board.

148. A Technical Support Mechanism (TSM) will be formed on the national level and associated with the SC, providing a technical pool of expertise that will support project implementation. This design is particularly important, as the project is designed to build capacity in Benin's existing Government structures, however support through consultancies, coaching and training is required throughout project implementation. The availability of a think-tank like TSM will readily avail such needed support capacity.

149. The Project Manager will be the team leader and will be included in the reporting structure of MEPN. He/she has the authority to run the project on a day-to-day basis on behalf of the Implementing Partner (MEPN) within the constraints laid down by the Board. 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.

150. The Project Support team provides project administration, management and technical support to the Project Manager. One M&E and Communications expert (same person with adequate skills or two persons part-time) will be hired to support the outreach work to the four agro-ecological zones, pilot communes and demonstration villages. This position will be financed from MEPN cash-co-financing contributions. A full-time Finance and Admin Manager will be based in Cotonou, whilst two additional regional financial staff members will be responsible and based on a regional level (responsible for Zones 1 and 4 and Zones 5 and 8). Staff of MAEP and MEPN in the Communes will support the implementation of project activities on Commune and village level, in conjunction with the Project Team, and under the development of the Commune level PTAs. The draft of the Terms of Reference for all key personnel is included in Annex 2.

151. To promote ownership of all involved key stakeholders, the project office will be set up outside any existing Government setting.

152. Project interventions will take place on a Commune level. Whilst the overall oversight is vested with the Commune (through the Mayor), it is multi-stakeholder Commune Technical Committees (CTC) that are responsible for preparing the annual workplans (PTA) and budgets as well as implementation thereof. Financial resources will be made available directly to project partners in the Communes; consequently a decentralized financial management system is required. Independent M&E will take place with inputs from the national level SC. The CTC are ultimately responsible for implementation of the PTA in their respective commune as well as the implementation of priority actions in the selected Demonstration Village(s) in their Commune.



## 6. Monitoring Framework and Evaluation

153. The project will be monitored through the following M&E activities. The M&E budget is provided in the table below.

### Project start:

154. 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 programme 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.

155. The Inception Workshop should address a number of key issues including:

- a) Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff 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.
- b) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- c) 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.
- d) Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- e) Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

156. 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.

### 157. 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 can be used to monitor issues, lessons learned etc... The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

### 158. 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
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

**Periodic Monitoring through site visits:**

159. UNDP CO and the UNDP RCU 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.

**Mid-term of project cycle:**

160. The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation (insert date). The Mid-Term Evaluation 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 evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

161. The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

**End of Project:**

162. An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final 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.

163. 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).

164. The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

165. During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

**Learning and knowledge sharing:**

166. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.

167. 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.

168. Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

#### M& E workplan and budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> <li>Project Manager</li> <li>UNDP CO, UNDP GEF</li> </ul>	5,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> <li>UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.</li> </ul>	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	<ul style="list-style-type: none"> <li>Oversight by Project Manager</li> <li>Project team</li> </ul>	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> <li>Project manager and team</li> <li>UNDP CO</li> <li>UNDP RTA</li> <li>UNDP EEG</li> </ul>	None	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> <li>Project manager and team</li> </ul>	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> <li>Project manager and team</li> <li>UNDP CO</li> <li>UNDP RCU</li> <li>External Consultants (i.e. evaluation team)</li> </ul>	35,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> <li>Project manager and team,</li> <li>UNDP CO</li> <li>UNDP RCU</li> <li>External Consultants (i.e. evaluation team)</li> </ul>	35,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> <li>Project manager and team</li> <li>UNDP CO</li> <li>local consultant</li> </ul>	5,000	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> <li>UNDP CO</li> <li>Project manager and team</li> </ul>	Indicative cost per year: 3,000 (for FOUR years)	Yearly
Visits to field sites	<ul style="list-style-type: none"> <li>UNDP CO</li> <li>UNDP RCU (as appropriate)</li> <li>Government representatives</li> </ul>	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 92,000	

## 7. Legal Context

169. 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 [or other appropriate governing agreement] and all CPAP provisions apply to this document.

170. 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.

171. 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.

172. 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.

173. 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.

Country:

United Nations Development Programme

Country: BENIN  
PROJECT DOCUMENT<sup>34</sup>



**Project Title:** Integrated Adaptation Programme to Combat the Effects of Climate Change on Agricultural Production and Food Security in Benin

**UNDAF Outcome(s):**

UNDAF Outcome 1: By 2013, marginalized populations i.e. young people and women, benefit from employment opportunities and income generating activities leading to increased food security.

**UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:** see Annex 2

**Key Results Area:** Promote climate change adaptation

**Provisional Corporate Outcome 1.** Strengthened capacity of developing countries to mainstream climate change adaptation policies into national development plans.

**UNDP Strategic Plan Secondary Outcome:** see Annex 2

**Key Results Area:** Expanding access to environmental and energy services for the poor.

**Provisional Corporate Outcome 2.** Strengthened capacity of local institutions to manage the environment and expand environment and energy services, especially to the poor.

**Expected CP Outcome(s):**

*(Those linked to the project and extracted from the country programme document)*

**Expected CPAP Output (s)**

1. The capacities of national structures and local communities are developed in terms of environmental preservation.
2. In response to climate change risks, adaptation strategies and measures are developed and implemented in the most vulnerable zones.

**Executing Entity/Implementing Partner:** MEPN, Ministry of Environment and Nature Protection

**Implementing Entity/Responsible Partners:** UNDP

<sup>34</sup> For UNDP supported GEF funded projects as this includes GEF-specific requirements

### Brief Description

Benin is at risk to climate change, and that all natural resource-based productive sectors, including agriculture, fisheries, forestry, and overall food security are already adversely affected by climate change.

Whilst adaptation to climate change has been identified as one key priority to prevent crises and catastrophes by Government at the national level, the capacities to induce and strengthen adaptation at the decentralised government level are relatively limited. Communes and decentralised line Ministries have limited knowledge of climate change risks, adaptation needs and options, and individual, institutional and systemic capacities to act on such risks remain low. Although a great deal of endogenous coping mechanisms already exists, more systematic adaptive planning is not currently taking place and local communities are not yet fully engaged in desperately needed adaptation action.

The proposed initiative aims to strengthen capacities of agricultural communities to adapt to climate change in four vulnerable agro-ecological zones in Benin. Through Outcome 1, the initiative will contribute to developing a climate change resilient planning framework for the focal sectors in Benin, ensuring that commune and national development plans, sectoral policies and associated budgets incorporate adaptation needs. The technical and scientific capacity to provide critical decision-making support information will be strengthened. Through Outcome 2 the necessary enabling and support environment for communities to be empowered to adapt to adverse climatic conditions will be strengthened. Commune level governance structures' capacities to facilitate and catalyse anticipatory local community action on adaptation will be improved. Dedicated community-level project interventions will be piloted in four out of nine agro-ecological zones, developing and testing specific distinct production systems associated with each of these zones that is more likely to succeed under conditions of climate change. Outcome 3 focuses on promoting sharing of adaptation learning within Benin and internationally.

Overall climate change resilient food security will be achieved in these pilot communities, and the overall governance framework concerning agriculture and food security will become climate resilient.

The initiative will be led by the Ministry of Environment and Nature Protection (MEPN), with support from UNDP and other partners, as per the NEX arrangements.

Programme Period:	2009 – 2014
Atlas Award ID:	00059395 (BEN10)
Project ID:	00074252 (BEN10)
PIMS #	4047
Start date:	January 2010
End Date	December 2014
Management Arrangements	NEX
PAC Meeting Date	13 Oct 2009

Total resources required	
Total allocated resources:	11,310,000
▪ Regular (GEF/LDCF)	3,410,000
• Other:	
o Government(MEPN)	850,000
o Government (in-kind)	4,114,381
o Communes (cash)	341,000
o Communes (in-kind)	2,094,619
o Undp (cash)	500,000

Agreed by (Government):

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner):

Date/Month/Year

Agreed by (UNDP):

Date/Month/Year

**Martin BEKELE-THOMAS**

**Justin Sossou ADANMAYI**

Organisation des Nations Unies  
pour le développement



## **8. Annexes**

**Annex 1: Risk Log**

**Annex 2: Terms of Reference for Key Personnel**

**Annex 3: Capacity Assessment of Implementing Partner (MEPN)**

**Annex 4. Descriptions of Agro-ecological Zone and Pilot Communes and draft element for Village Adaptation Programmes**

**Annex 5. Summary of Training Needs and Capacity Assessment**

**Annex 6: Draft design elements for agro-meteorological information system**

**Annex 9: Stakeholder Consultation Protocols**

**Annex 8: References including to key assessment reports**

**Annex 9: Agreements (Co-financing letters)**

### Annex 1. RISK LOG

Project Title: \_\_\_\_\_ Award ID: \_\_\_\_\_ Date: \_\_\_\_\_

#	Description	Date Identified	Type	Impact & Probability (1-5)	Countermeasures / Mngt response	Owner	Submitted, updated by	Last Update	Status
1	Insufficient qualified human resources	PIF (August 2008)	Organizational	P = 4 I = 5	Trainings are planned for technical staff within the agriculture and meteorological departments as well as for all actors who will be involved at the local level. The UNDP will also seize the opportunity offered by the network of communities of practice to gain access to quality advice.				
2	Adaptation technologies costs and maintenance	PIF (August 2008)	Financial	P = 2 I = 4	The project will favour adaptation measures and options with low operation costs. In addition, the targeted technical staff will be trained in maintenance techniques and national budgets will be allocated to secure the sustainability of the climate risks management systems and results achieved by the project.				
3	Appropriation of adaptive technologies by communities	PIF (August 2008)	Organizational	P = 2 I = 4	The participatory approach used to formulate the NAPA is an asset and will be implemented. Communities and local decision-makers will be represented in the Results Committee which will be set up within the framework of this project. The adaptive technologies promoted by the project will be based on endogenous practices. Farmers Action Research activities will be set up in the demonstration villages.				
4	Cultural and social resistance	PIF (August 2008)	Organizational	P = 2 I = 4	Particular attention will be given to involving key actors in project implementation while taking into account the culture and social factors during project development. The rainmakers are just one				







## Types of Risks

Environmental	Financial	Organizational	Political	Operational	Regulatory	Strategic	Other
Natural Disasters: storms, flooding, earthquakes	EXTERNAL economic factors: interest rates, exchange rate fluctuation, inflation	Institutional Arrangements	Corruption	Complex Design (size: larger/multi-country project; technical complexity; innovativeness, multiple funding sources)	New unexpected regulations, policies	Partnerships failing to deliver	Other risks that do not fit in an of the other categories
Pollution incidents	INTERNAL:	Institutional/ Execution Capacity	Government Commitment	Project Management	Critical policies or legislation fails to pass or progress in the legislative process	Strategic Vision, Planning and Communication	Might refer to socioeconomic factors such as: population pressures; encroachment – illegal invasions; poaching/illegal hunting or fishing
Social and Cultural	Co-financing difficulties	Implementation arrangements	Political Will	Human Error/Incompetence		Leadership and Management	Poor response to gender equity efforts
Security/Safety	Use of financing mechanisms	Country Office Capacity (specific elements limiting CO capacity)	Political Instability	Infrastructure Failure		Programme Alignment	
Economic	Funding (Financial Resources)	Governance	Change in Government	Safety being compromised		Competition	
	Reserve Adequacy	Culture, Code of Conduct and Ethics	Armed Conflict and Instability	Poor monitoring and evaluation		Stakeholder Relations	
	Currency	Accountability and Compensation	Adverse Public opinion/media intervention	Delivery		Reputation	
	Receivables	Succession Planning and Talent Management		Programme Management		UN Coordination	
	Accounting/Financial Reporting	Human resources Processes and Procedures		Process Efficiency		UN Reform	
	Budget Allocation and Management			Internal Controls			
	Cash Management/Reconciliation			Internal and External Fraud			
	Pricing/Cost Recovery			Compliance and Legal			
				Procurement			
				Technology			
				Physical Assets			

## Annex 2: Terms of Reference for Key Personnel

- a. Project Manager
- b. M&E and Communications Expert
- c. Finance and Admin Manager
- d. Regional financial staff (2)

### a. Project Manager

- Plan the activities of the project and monitor progress against the initial quality criteria.
- Guide technical work under outcome 1 and outcome 2
- Mobilize goods and services to initiative activities, including drafting TORs and work specifications;
- Monitor events as determined in the Project Monitoring Schedule Plan, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, using advance of funds, direct payments, or reimbursement using the FACE (Fund Authorization and Certificate of Expenditures);
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports;
- Responsible for preparing and submitting financial reports to UNDP on a quarterly basis;
- Manage and monitor the project risks initially identified, submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the Project Risks Log;
- Be responsible for managing issues and requests for change by maintaining an Issues Log;
- Prepare the Project Progress Report (progress against planned activities, update on Risks and Issues, expenditures) and submit the report to the Project Board and Project Assurance;
- Prepare the Annual Review Report, and submit the report to the Project Board and the Outcome Board;
- Annual Performance Report (APR)/Project Implementation Review (PIR)
- Prepare the AWP for the following year, as well as Quarterly Plans if required;
- Update the Atlas Project Management module if external access is made available.

### b. M&E and Communications Expert *(one full time position or two part time positions)*

- Provide technical expertise and guidance to all project components, and support the PM in the coordination of the implementation of planned activities under the LDCF project as stipulated in the project document/work plan
- Specifically responsible for the technical input into the development of a M&E framework and its implementation and follow-up with all relevant stakeholders at national and commune level
- Be responsible for the work of the Knowledge Management component (outcome 3);
- Ensure that technical contracts meet the highest standards; provide input into development of Terms of Reference for sub-contracts, assist with selection process, recommend best candidates and approaches, provide technical peer function to sub-contractors; provide training and backstopping were necessary
- Provide technical inputs into the work of the Steering Committee, the Technical Support Mechanism, the Commune Technical Committees and other relevant institutions implicated in the project management and implementation arrangements
- Give input into the development of technical training packages for all target groups and provide peer review function; in certain cases carry out selected training events
- Serve in a mentoring and back stopping function to project staff, as relevant
- Undertake regular reporting in line with project management guidelines.

### c. Finance and Admin Manager

- Set up and maintain project files
- Collect project related information data
- Update plans
- Administer Project Board, SC and other relevant meetings

- Administer project revision control
- Establish document control procedures
- Compile, copy and distribute all project reports
- Responsible for the financial management tasks under the responsibility of the Project Manager
- Provide support in the use of Atlas for monitoring and reporting
- Review technical reports
- Monitor technical activities carried out by responsible parties
- Supervise regional finance personnel

**c. Regional finance staff (1 for Zones 1 and 4; 1 for Zones 5 and 8)**

- Set up and maintain zone specific project files
- Collect project related information data
- Update plans
- Administer Commune Technical Committee and relevant meetings in respective Zone
- Administer project revision control on regional level
- Establish document control procedures on regional level
- Compile, copy and distribute all project reports on regional level
- Responsible for the financial management tasks under the responsibility of the Project Manager and under guidance of the Finance and Admin Manager
- Provide support in the use of Atlas for monitoring and reporting
- Review technical reports
- Monitor technical activities carried out by responsible parties in the regions

### Annex 3. Capacity Assessment of Implementing Partner

#### Capacity Assessment: Results of capacity assessment of implementing Partner: Ministry of Environment and Nature Protection

Project Title		Integrated Adaptation Programme to Combat the Effects of Climate Change on Agricultural Production and Food Security in Benin	
Name of the Institution		Ministry of Environment and Nature Protection, Directorate of Environment	
Date of assessment		28 September 2009	
INDICATOR	AREAS FOR ASSESSMENT	APPLICABLE DOCUMENTS/TOOLS	COMMENTS
<b>PART I – REFERENCES AND PRELIMINARY CHECKS</b>			
<b>1.1 History and Compliance with International Resolutions/Standards</b>			
1.1.1 History	The Ministry of Environment and the Nature Protection was created at 2006. Various Ministry Directorates are being restructured continuously.	Annual Reports (see the Ministry of Environment and the Nature Protection annual reports available upon request. Media Kit (N/A) Website: www.mepn.net	
1.1.2 United Nations Security Council 1267	Is the institution listed in any reference list? N/A	United Nations Security Council 1267 Committee's list of terrorists and terrorist financiers N/A	This is a government Ministry and therefore this is not applicable.
1.1.3 Certification	Is the institution already certified through international standards? N/A	ISO, Project Management standard, other standards N/A	N/A
<b>PART II. ASSESSING NATIONAL INSTITUTION CAPACITY FOR PROJECT MANAGEMENT</b>			
<b>2.1 Managerial Capacity</b>			
Ability to plan, monitor and coordinate activities			
Planning, Monitoring & Evaluation	Does the institution produce clear, internally consistent proposals and intervention frameworks, including detailed workplans? The Ministry of Environment and the Nature Protection intervention framework integrate National Strategy	Well-designed project and programme documents Action Plans/Work plans Log frame or equivalent Project reports Evaluation reports Indicators available in project plans	

	<p><b>of Growth and the Reduction of Poverty and compile annual workplan.</b></p> <p>Does the institution hold regular programme or project review meetings?</p> <p><b>There are quarterly ministerial meetings to review activities and strategic meetings twice a year. The Ministry of Environment and the Nature Protection produces regular annual report which is submitted to Parliament every year.</b></p> <p>Are there measurable outputs/deliverables in the defined project plans?</p> <p><b>The Ministry of Environment and the Nature Protection sets clearly defined indicators and targets every year.</b></p> <p>Was the institution previously exposed to UNDP RBM approach/methodology or equivalent in other donor agencies? <i>N/A</i></p>	<p>Lessons-Learned reports</p> <p><b>Available upon request</b></p>	
<p>2.1.2 Reporting and performance track record</p>	<p>Does the institution monitor progress against well defined indicator and targets, and evaluate its programme/project achievements?</p> <p><b>The Ministry of Environment and the Nature Protection sets clearly defined indicators and targets every year.</b></p> <p>Does the institution report to its stakeholders on a regular basis?</p> <p><b>Yes, through it annual mandatory progress report which is submitted to Parliament and is available</b></p>	<p>Reports to donors and other stakeholders</p> <p><b>The Ministry of Environment and the Nature Protection has been a recipient of donors' funding since its inception and has a track record of complying with specific donor reporting requirements.</b></p> <p>Reporting system <i>N/A</i></p>	

	to the wide public.		
<b>2.2 Technical Capacity</b>			
2.2.1 Specialization	<p>Does the institution have the technical skills required?  <b>The Directorate of Environment has combined specialised staff members supported by consultants.</b></p> <p>Does the institution have the knowledge needed?  <b>The Ministry of Environment and the Nature Protection is the authority mandated to oversee the management of natural resources base in Benin.</b></p> <p>Does the institution keep informed about the latest techniques/competencies/policies/trends in its area of expertise?  <b>The Ministry of Environment and the Nature Protection is responsible for policy development, formulation and implementation as regard to environmental management.</b></p> <p>Does the institution have the skills and competencies that complement those of UNDP?  <b>The Ministry of Environment and the Nature Protection has been collaborating well with the UNDP on a number of projects funded by the GEF</b></p>	<p>Publications on activities, specific issues, analytical articles, policies</p> <p>Reports from participation in international, regional, national or local meetings and conferences</p> <p>Tools and methodologies</p> <p>Evaluations and assessments</p>	N/A
2.2.2 Ability to monitor the technical aspects of the project.	<p>Does the institution have access to relevant information/resources and experience?  <b>The Ministry of Environment and the Nature Protection has access to all environmental data available in the</b></p>	<p>Evaluations and Assessments</p> <p>Methodologies/training materials</p> <p>Use of toolkits, indicators and benchmarks/capacity-development tools</p>	N/A most of the assessment



	<p>country and has built up a portfolio of its cadre of expertise in the sector. The Benin Environment Agency (ABE) is specifically created to take charge of this responsibility.</p> <p>Does the institution have useful contacts and networks?</p> <p><b>Yes, the Ministry of Environment and the Nature Protection has worked with a number of stakeholders including donors, Non-governmental organization, community-based support organizations, multilateral organizations, etc. it has a good track record of networking.</b></p> <p>Does the institution know how to get baseline data, develop indicators?</p> <p><b>Yes,</b></p> <p>Does it apply effective approaches to reach its targets (i.e. participatory methods)?</p> <p><b>Yes, the RAP as NAPA is very experienced in community consultations</b></p>	<p>Databases N/A</p>	
<p>2.2.3 Human Resources</p>	<p>Does the institution staff possess adequate expertise and experience?</p> <p><b>The Ministry of Environment and the Nature Protection has over 1053 staff complement of various specializations. In particular the 2<sup>nd</sup> degree has 252 posts government funded and a pool of consultants working on a number of donor funded projects.</b></p> <p>Does the institution use local capacities</p>	<p>Profile of staff, including expertise and professional experience Staff turnover Chart of assignments of roles and functions Reports on technical experience from national or international agencies for operations and capacity-building Individual certification on project management such as PRINCE2</p>	

	<p>(financial/human/other resources)?</p> <p><b>Yes, the Ministry of Environment and the Nature Protection makes use of local consultants for specialized services.</b></p> <p>What is the institution capacity to coordinate between its main office and decentralized entities/branches (if relevant)?</p> <p><b>N/A</b></p> <p>Have staff been trained on project management methodology? <b>Yes, several course on project management (RMG) have been offered</b></p>		
<b>PART III. ASSESSING NATIONAL INSTITUTION CAPACITY FOR ADMINISTRATIVE AND FINANCIAL MANAGEMENT</b>			
<b>3.1 Administrative capacity</b>			
<i>Ability to provide adequate logistical support and infrastructure</i>			
3.1.1 Ability to manage and maintain infrastructure and equipment	<p>Does the institution possess logistical infrastructure and equipment?</p> <p><b>Yes,</b></p> <p>Can the institution manage and maintain equipment?</p> <p><b>Yes,</b></p>	<p>Adequate logistical infrastructure: office facilities and space, basic equipment, utilities</p> <p>Office, regional and HQ.</p> <p>Computer capability and library materials</p> <p>Proper equipment for area of specialization</p> <p>inventory to track property and cost</p>	
3.1.2 Ability to procure goods services and works on a transparent and competitive basis.	<p>Does the institution have the ability to procure goods, services and works on a transparent and competitive basis? <b>Yes,</b></p> <p>Does the institution have standard contracts or access to legal counsel to ensure that contracts meet performance standards, protect UNDP and the institution's interests and</p>	<p>Standard contracts</p> <p>Examples of how procurement is done</p> <p>Written procedures for identifying the appropriate vendor, obtaining the best price, and issuing commitments</p>	

	<p>are enforceable?</p> <p><b>Yes, like any other government Ministry, the Ministry of Environment receives its legal advice from the Ministry of Finance and Economy.</b></p> <p>Does the institution have the authority to enter into contracts?</p> <p><b>Yes, it is created through the Constitution and thus has legal mandates.</b></p>		
3.1.3 Ability to recruit and manage the best-qualified personnel on a transparent and competitive basis.	<p>Is the institution able to staff the project and enter into contract with personnel?</p> <p><b>Yes in collaboration with the Ministry of Publique Fonction, it is created through the Constitution and thus has legal mandates.</b></p> <p>Does the institution use written job descriptions for consultants or experts? <b>Yes</b></p>	<p>Standard contracts</p> <p>Job descriptions</p>	N/A
<p><b>3.2 Financial Capacity</b>  <i>Ability to ensure appropriate management of funds</i></p>			
3.2.1 Financial management and funding resources	<p>Is there a regular budget cycle? <b>Yes, triennial budget Starting 2010-2012</b></p> <p>Does the institution produce programme and project budgets? <b>Yes</b></p> <p>What is the maximum amount of money the institution has managed? <b>The money managed by all the Ministries are located in Financial Ministry</b></p> <p>Does the institution ensure physical security of advances, cash and records? <b>Yes</b></p> <p>Does the institution disburse funds in a timely and effective manner? <b>No</b></p> <p>Does the institution have procedures on authority,</p>	<p>Operating budgets and financial reports</p> <p>List of core and non-core donors and years of funding</p> <p>Written procedures ensuring clear records for payable, receivables, stock and inventory</p> <p>Reporting system that tracks all commitments and expenditures against budgets by line</p>	<p><b>N/A, as clearly a normal function of the ministry.</b></p>

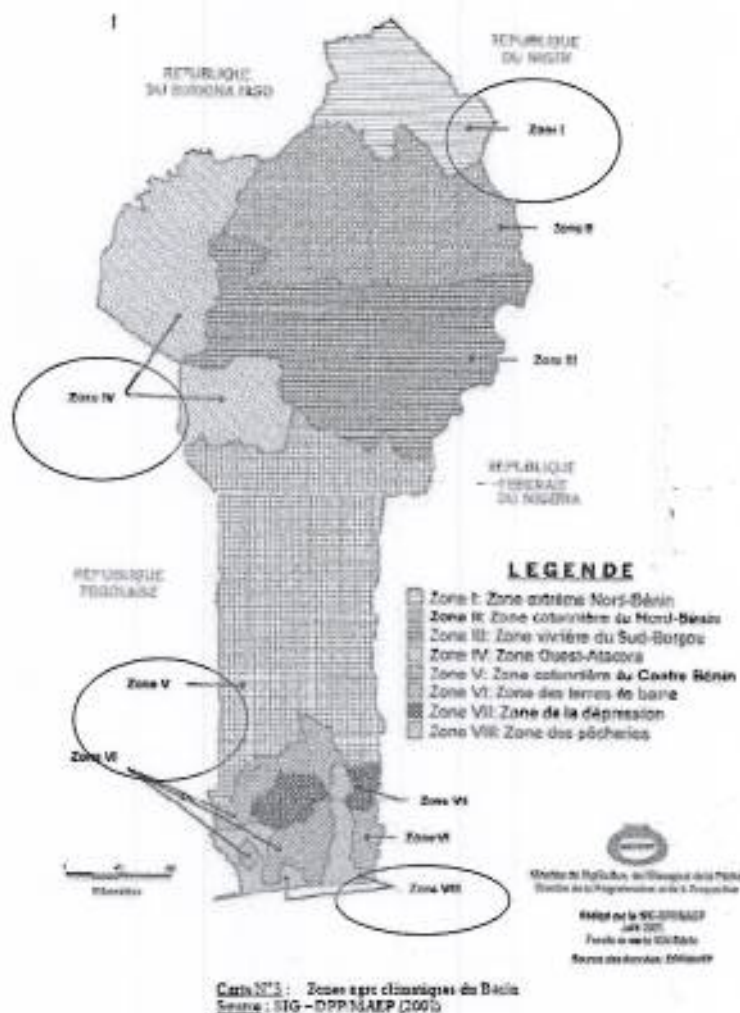
	<p>responsibility, monitoring and accountability of handling funds? <b>Yes</b></p> <p>Does the institution have a record of financial stability and reliability? <b>No</b></p>		
3.2.2. Accounting System	<p>Does the institution keep good, accurate and informative accounts?</p> <p><b>Yes, the Ministry of Environment is regularly audited by the Auditor General office as any other Government Ministry, and scrutinized by the Parliamentary Committee on Public Account.</b></p> <p>Does the institution have the ability to ensure proper financial recording and reporting?</p> <p><b>Yes,</b></p>	<p>A bank account or bank statements</p> <p>Audited financial statements</p> <p>Good, accurate and informative accounting system</p> <p>Written procedures for processing payments to control the risks through segregation of duties, and transaction recording and reporting</p>	N/A
3.2.3. Knowledge of UNDP financial system	<p>Does the institution have staff familiar with Atlas through External Access?</p> <p><b>Yes, see the explanation provided in the preceding section.</b></p>	<p><b>Where necessary administration of project finance is outsourced through contract.</b></p> <p>External access provided</p>	

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## Annex 4. Descriptions of Agro-ecological Zones and Pilot Communes and draft element for Village Adaptation Programmes<sup>35</sup>

In Benin overall nine agro-ecological zones are being distinguished, namely:

- Zone 1: Extreme North (Zone extreme Nord-Benin)
- Zone 2: Cotton zone of northern Benin (Zone cotonniere du Nord-Benin)
- Zone 3: Food producing zone of South Borgou (Zone vivriere du Sud-Borgou)
- Zone 4: West Atacora (Zone Ouest-Atacora)
- Zone 5: Central cotton zone (Zone cotonniere du Centre-Benin)
- Zone 6: Bare soils (Zone des terres barre)
- Zone 7: Depression (Zone de la depression)
- Zone 8: Fisheries zone (Zone de pecheries)



<sup>35</sup> Key references for this summary are: NAPA (MEPN, 2006), V&A study (synthesis and evaluation report) (Aho, P.N., 2006 a and 2006 b), PPG phase local level consultations report MEPN – PPG 1, 2009).

In 2006, the Government of Benin commissioned a Vulnerability Assessment (Aho, 2006) that identified the (i) key climate risks, (ii) levels of the socio-economic baseline, including population pressure and prevailing poverty levels, and (iii) the state of the natural resources base i.e. levels of degradation. Taken together, these three parameters were used to assess the level of vulnerability of various agro-ecological zones and specific communes and communities. Zone 1, 4, 5 and 8 were identified to be particularly vulnerable to climate change, with the local population having low levels of adaptive capacities. This systematic assessment was integrated in the NAPA and also lays the foundation for the selection of the four project focal zones, namely:

Zone 1: Far/Extreme North (Pilot commune: Malanville)

Zone 4: West-North Atacora Donga (Pilot communes: Materi and Ouake)

Zone 5: Central Cotton Zone (Cotonnière du Centre) (Pilot communes: Savalou and Aplahoué)

Zone 8: Fisheries (Pêcheries) (Pilot communes: Bopa, So Ava, Adjohoun and Ouïhi)

The zones are characterized by distinguished weather and climate conditions, natural and cultural circumstances. Consequently the climate change risk and impacts differently in each zone, and on different agricultural and food security (cultivation, livestock, husbandry, fishing) systems. Adaptation measures need to be responsive to the specific needs in each zone, but also those peculiar to a specific commune and village.

During the PPG phase, local level consultations were conducted that verified and deepened the understanding of such adaptation needs through local level consultation and a participatory planning approach. The key results from the PPG consultations inform especially the village and commune level project interventions under outcome 2. The following sections summarize some of the key findings as per agro-ecological zone.

Key references are: NAPA (MEPN, 2006), V&A study (synthesis and evaluation report) (Aho, P.N., 2006 a and 2006 b), PPG phase local level consultations report MEPN – PPG 1, 2009).

#### ***Zone 1: Far North (Pilot commune: Malanville):***

##### ***Background***

Agro-ecological Zone 1 encompasses the region of Alibori with seven communes. Overall an area of 9,057 km<sup>2</sup> is covered by Zone 1 and around 141,207 people live in this zone (2002). The main ethnicities in the area are Dendi, Gourmarntche, Haoussa, Peuhl and Tchenga. Over 82% of the population is rural living, directly depending on agricultural activities for food security and income generation. In the Far North, the main agricultural activities are the cultivation of millet, sorghum, cotton, vegetables, and rice. Cattle husbandry, fishing, and hunting provide additional food and income.

##### ***Climate change risk and expected impacts***

- Change in rainfall patterns; onset of rains later and more dry spells throughout the unimodal rainfall season; prolonged droughts
- Impacts on agriculture: difficult to predict when to plant, commonly used cultivars do not survive the dryspells; heavy rainfall events lead to flooding as soils are hard and destroy cultivars; increased pressure on natural resources through increased trans-humance (incl. across borders); poor productivity; failed harvests and using up of reserves lead to food insecurity, impoverishment, and poor health amongst communities

##### ***Current coping mechanisms***

The current adaptation mechanisms expressed by the farmers were the change of food uptake from three times a day to twice a day, and the practice of short rotation sorghum cultivation (with rotation periods of two to three months).

Additionally (from Napa): Prayers, rural migration, forced rains (e.g. via rainmakers), massive application of fertilizers, use of short-cycle cultivars, fishermen become livestock holders, sensitisation for the need for reforestation, dredging of rivers, promotion of traditional healing and pharmaceuticals, promotion adoption of better practices

##### ***Self-identified priority adaptation measures***

- Management of trans-humance (migration of livestock herders incl. from across the borders)
- Reforestation of river catchments; establishment of reforestation committees
- Wildfire management

- Alternative energies (reduction of use of fire wood and charcoal)
- Labour "attele"?
- Short-cycle mas
- Institutional developments, e.g. environmental clubs

**Zone 4: West-North Atacora Donga (Pilot communes: Materi and Ouake):**

Background

Agro-ecological Zone 4 includes two regions, i.e. Atacora and Donga (partially shared with Zone 5), with nine and four communes respectively. The area of the zone is 16,936 km<sup>2</sup>, and the overall population is estimated at 629,973 (2002). The main ethnicities in the zone are Berba, Betammarimbe, Lokpa, M'Berme and Yowa. Over 75% of the population are believed to live in rural areas. In West Atacora-North Donga, different cereals and sweet potatoes are cultivated. The for the project selected pilot communes are Tanguita and Ouake.

Climate change risk and expected impacts

- Change in rainfall patterns; onset of rains later and more dry spells; absence of rain
- Impacts: low agricultural productivity, food insecurity especially during July and August, difficulty to arrange market access, conflicts between transhumance (migrating livestock herders) and agriculturalists, bush fires

Current coping mechanisms

The local population practices a wide range of adaptation measures. These include – but are not limited to – rice and vegetable cultivation, techniques to retain soil moisture, soil improvement by adding organic materials, subsidies of grains, and short rotation rice cultivation (of two and a half to three months). Farmers also mentioned that vegetable cultivation has generated income to some community members, which enabled them to pay for their children's education. Collective plan/prayers, change of sites, adjustment of agricultural calendars, application of short-cycle varieties, building of shorter houses, exploitation of livestock which are better adapted to drought; develop gardening products; establishment of health committees and better health management

Self-identified priority adaptation measures

- Make agricultural implements available to agriculturalists
- Support the culture "attelee"
- Create new or rehabilitate existing water points; establish water point management committees
- Make available "decortiqueuses" for rice to farmers
- Strengthen husbandry of "Gefluegel"
- Alphabetisation
- Exchange of experiences
- Training: management, finances
- Help agriculturalists with the commercialisation of their produce
- Establish "transhumance" management committees
- Establish nurseries
- Prevent and manage soil erosion
- Get breeding cattle
- Organic manure
- Intensification of production
- Establish climatological station (upgrade existing rain gauges)

**Zone 5: Central Cotton Zone (Cotonnière du Centre) (Pilot communes: Savalou and Aplahoué):**

Background

Agro-ecological Zone 5 stretches across four regions, Collines, Donga (partially shared with Zone 4), Borgou, Couffo and Plateau. Overall 31,722 km<sup>2</sup> are covered by the zone, and over 864,205 (2002) inhabitants live in the area. Main ethnicities are Adja, Anni, Bariba, Fon, Holli, Idatcha, Kotocoli, Lokpa, Mahi, Nago, Peuhl and Yoruba. Over 79% of the population lives rural livelihoods. In Central Cotton Zone, cereals, cotton, and pulses are the main agricultural output. Pilot communes selected for the project are Savalou and Aplahoué).

Climate change risk and expected impacts

- Intense dryness (dryspells, drought)

- Impacts: River course dried up (i.e. Adjakatan and Monlote); low productivity; soil fertility declining; lack of implements (manure, herbicides); epizooties and animal health problems; transhumance conflicts

Current coping mechanisms

There is very little information on current adaptation measures. The farmers which were consulted stated that a shift towards rice cultivation is the prevalent adaptation mechanism at the moment. Induced rainfall (rain makers); manures application; adoption of short cycle varieties; reforestation; traditional medicines; use of butan gas instead of wood

Self-identified priority adaptation measures

- Soil fertility management
- Post-harvest product conservation and storage
- Trans-humance management committee
- Make available implements to farmers
- Support "Culture attelée"
- Create new or rehabilitate existing water points
- "Decortiqueuse" de riz
- Forest restoration
- Prevent and management land degradation and desertification
- Train farmers
- Institutional development e.g. environmental clubs
- Water management
- Strengthen climatological stations at community-level

**Zone 8: Fisheries (Pêcheries) (Pilot communes: Bopa, So Ava, Adjohoun and Ouinhi):**

Background

Agro-ecological Zone 8 covers 3,151 km<sup>2</sup>. The overall population is estimated as 712,292, indicating a very high population density of 226 inhabitants per km<sup>2</sup>, the densest observed in Benin. 78% of the population in this area are rural living. Fishing is the main livelihood-generating activity in Pêcheries. Maize, manioc, and vegetables are also cultivated in Pêcheries, however, the lack of space for agricultural cultivation due to the high population density is a limiting factor (Ministère de l'Environnement et de la Protection de la Nature 2008). The communes have been selected as pilot partners in the LDCF project, namely Bopa, So Ava, Adjohoun and Ouinhi.

Climate change risk and expected impacts

- Flooding; water level raise more frequent
- Changes in the seasons; rainy seasons (bi-modal) (e.g. used to be March to June and July to November, now one rainy season May to October); delay of rainfall
- Strong winds
- Overall hotter temperatures
- Increased extreme events (torrential rainfall, droughts)

Current coping mechanisms

The consultations with the population of nine village communities generated knowledge on a wide range of adaptation mechanisms. In relation to water management, community members mentioned water retention and conservation, irrigation, and the use of motorized water pumps. Drainage is practiced to avoid flooding of fields near water courses. Furthermore, agricultural practices are adapted by short rotation maize production (two and a half months), seed preparation to foster earlier germination, and fallow for soil regeneration. The village communities also make use of indigenous knowledge on climate forecasting. In relation to rainfall forecasting, they observe the appearance of specific star constellations at a certain time of year. Rainmakers play a pivotal role as forecasters, bringing rain, requesting absence of rain, and overall management and opinion about climate and weather. Collective planning/prayers; rural migration; induced rainfall (by rainmakers); adjustment of agricultural calendars; application of short cycle varieties; application of late developing seed material; fishermen become livestock owners; creation of local markets (at commune level); traditional medicines; reforestation; animal enclosures; dredging of rivers; establish motorcycle taxis as means of transportation

Self-identified priority adaptation measures