AFB/PPRC.22-23/14
6 June 2018

Adaptation Fund Board
Project and Programme Review Committee

PROPOSAL FOR
BENIN, BURKINA FASO, NIGER

Background

1. The strategic priorities, policies and guidelines of the Adaptation Fund (the Fund), as well as its operational policies and guidelines include provisions for funding projects and programmes at the regional, i.e. transnational level. However, the Fund has thus far not funded such projects and programmes.

2. The Adaptation Fund Board (the Board), as well as its Project and Programme Review Committee (PPRC) and Ethics and Finance Committee (EFC) considered issues related to regional projects and programmes on a number of occasions between the Board's fourteenth and twenty-first meetings but the Board did not make decisions for the purpose of inviting proposals for such projects. Indeed, in its fourteenth meeting, the Board decided to:

> *(c) Request the secretariat to send a letter to any accredited regional implementing entities informing them that they could present a country project/programme but not a regional project/programme until a decision had been taken by the Board, and that they would be provided with further information pursuant to that decision*
>
> *(Decision B.14/25 (c))*

3. In its eighth meeting in March 2012, the PPRC came up with recommendations on certain definitions related to regional projects and programmes. However, as the subsequent seventeenth Board meeting took a different strategic approach to the overall question of regional projects and programmes, these PPRC recommendations were not included in a Board decision.

4. In its twenty-fourth meeting, the Board heard a presentation from the coordinator of the working group set up by decision B.17/20 and tasked with following up on the issue of regional projects and programmes. She circulated a recommendation prepared by the working group, for the consideration by the Board, and the Board decided:

> *(a) To initiate steps to launch a pilot programme on regional projects and programmes, not to exceed US$ 30 million;*
>
> *(b) That the pilot programme on regional projects and programmes will be outside of the consideration of the 50 per cent cap on multilateral implementing entities (MIEs) and the country cap;*
>
> *(c) That regional implementing entities (RIEs) and MIEs that partner with national implementing entities (NIEs) or other national institutions would be eligible for this pilot programme, and*
>
> *(d) To request the secretariat to prepare for the consideration of the Board, before the twenty-fifth meeting of the Board or intersessionally, under the guidance of the working group set up under decision B.17/20, a proposal for such a pilot programme based on consultations with contributors, MIEs, RIEs, the Adaptation Committee, the Climate Technology Centre and Network (CTCN), the Least Developed Countries*

Expert Group (LEG), and other relevant bodies, as appropriate, and in that proposal make a recommendation on possible options on approaches, procedures and priority areas for the implementation of the pilot programme.

(Decision B.24/30)

5. The proposal requested under (d) of the decision above was prepared by the secretariat and submitted to the Board in its twenty-fifth meeting, and the Board decided to:

(a) Approve the pilot programme on regional projects and programmes, as contained in document AFB/B.25/6/Rev.2;

(b) Set a cap of US$ 30 million for the programme;

(c) Request the secretariat to issue a call for regional project and programme proposals for consideration by the Board in its twenty-sixth meeting; and

(d) Request the secretariat to continue discussions with the Climate Technology Center and Network (CTCN) towards operationalizing, during the implementation of the pilot programme on regional projects and programmes, the Synergy Option 2 on knowledge management proposed by CTCN and included in Annex III of the document AFB/B.25/6/Rev.2.

(Decision B.25/28)

6. Based on the Board Decision B.25/28, the first call for regional project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Fund was sent out on 5 May 2015.

7. In its twenty-sixth meeting the Board decided *to request the secretariat to inform the Multilateral Implementing Entities and Regional Implementing Entities that the call for proposals under the Pilot Programme for Regional Projects and Programmes is still open and to encourage them to submit proposals to the Board at its 27th meeting, bearing in mind the cap established by Decision B.25/26.*

(Decision B.26/3)

8. In its twenty-seventh meeting the Board decided to:

(a) Continue consideration of regional project and programme proposals under the pilot programme, while reminding the implementing entities that the amount set aside for the pilot programme is US$ 30 million;

(b) Request the secretariat to prepare for consideration by the Project and Programme Review Committee at its nineteenth meeting, a proposal for prioritization among

regional project/programme proposals, including for awarding project formulation grants, and for establishment of a pipeline; and

(c) Consider the matter of the pilot programme for regional projects and programmes at its twenty-eighth meeting.

(Decision B.27/5)

9. The proposal requested in (b) above was presented to the nineteenth meeting of the PPRC as document AFB/PPRC.19/5. The Board subsequently decided:

a) With regard to the pilot programme approved by decision B.25/28:

(i) To prioritize the four projects and 10 project formulation grants as follows:

1. If the proposals recommended to be funded in a given meeting of the PPRC do not exceed the available slots under the pilot programme, all those proposals would be submitted to the Board for funding;

2. If the proposals recommended to be funded in a given meeting of the PPRC do exceed the available slots under the pilot programme, the proposals to be funded under the pilot programme would be prioritized so that the total number of projects and project formulation grants (PFGs) under the programme maximizes the total diversity of projects/PFGs. This would be done using a three-tier prioritization system: so that the proposals in relatively less funded sectors would be prioritized as the first level of prioritization. If there are more than one proposal in the same sector: the proposals in relatively less funded regions are prioritized as the second level of prioritization. If there are more than one proposal in the same region, the proposals submitted by relatively less represented implementing entity would be prioritized as the third level of prioritization;

(ii) To request the secretariat to report on the progress and experiences of the pilot programme to the PPRC at its twenty-third meeting; and

b) With regard to financing regional proposals beyond the pilot programme referred to above:

(i) To continue considering regional proposals for funding, within the two categories originally described in document AFB/B.25/6/Rev.2: ones requesting up to US$ 14 million, and others requesting up to US$ 5 million, subject to review of the regional programme;

(ii) To establish two pipelines for technically cleared regional proposals: one for proposals up to US$ 14 million and the other for proposals up to US$ 5 million, and place any technically cleared regional proposals, in those pipelines, in the order described in decision B.17/19 (their date of recommendation by the PPRC, their submission date, their lower "net" cost); and

(iii) To fund projects from the two pipelines, using funds available for the respective types of implementing entities, so that the maximum number of or maximum total funding for projects and project formulation grants to be approved each fiscal year will be outlined at the time of approving the annual work plan of the Board.

(Decision B.28/1)

10. According to the Board Decision B.12/10, a project or programme proposal needs to be received by the secretariat no less than nine weeks before a Board meeting, in order to be considered by the Board in that meeting.

11. The following project document titled "Integration of climate change adaptation measures in the concerted management of the WAP transboundary complex: ADAPT-WAP" was submitted by the Sahara and Sahel Observatory (OSS), which is a Regional Implementing Entity of the Adaptation Fund.

12. This is the first submission of the fully-developed proposal, using the three-step process. It was first submitted as a pre-concept to the twenty-eight Board meeting and was endorsed. It was then submitted to the twenty-ninth/thirtieth intersessional review cycle as a project concept document and the Board decided:

a) To endorse the project concept, as supplemented by the clarification responses provided by the Sahara and Sahel Observatory (OSS) to the request made by the initial technical review;

b) Request the secretariat to transmit to OSS the observations in the review sheet annexed to the notification of the Board's decision as well as the following issues:

(i) The fully-developed project document should clarify how climate-related threats such as drought, floods and bushfire relate specifically to the WAP complex, particularly the flood related threat;

(ii) The fully-developed project document should strengthen the adaptation reasoning behind the support to fishermen under output 3.1.5;

(iii) The use of solar panels under output 3.2.4 should be better justified. Also, a general understanding of how all these activities could be connected and complement each other is still missing;

(iv) The proposal should clarify the amounts to be allocated at the national level, including for activities specific to the Arly National Park in Burkina Faso and the Pendjari National Park in Benin;

(v) The fully-developed project document should better demonstrate the cost effectiveness of the project;

(vi) To demonstrate consistency with national or regional strategies and plans, WAPspecific plans and strategies should be reflected, including the 2016-2025 management plan and the Regional Fisheries Strategy for the WAP complex;

(vii) The fully-developed project document should demonstrate that gender perspectives are fully taken into account;

(viii) The fully-developed project document should better justify the full cost of adaptation reasoning, drawing on the scheduled vulnerability assessment of the complex as well as existing WAP-specific strategies and management plans;

c) Approve the funding of US$ 80,000 as project formulation grant, requested by OSS;

d) Request OSS to transmit the observations under sub-paragraph (b) to the Governments of Benin, Burkina Faso and Niger; and

e) Encourage the Governments of Benin, Burkina Faso and Niger to submit through OSS a fully-developed project document that would address the observations under sub-paragraph (b) above.

Decision B.29-30/7

13. The present submission was received by the secretariat in time to be considered in the intersessional thirty-first/thirty-second Board meeting. The secretariat carried out a technical review of the project proposal, assigned it the diary number AFR/RIE/DRR/2016/1 and completed a review sheet.

14. In accordance with a request to the secretariat made by the Board in its 10th meeting, the secretariat shared this review sheet with OSS, and offered it the opportunity of providing responses before the review sheet was sent to the PPRC.

15. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25.15, the proposal is submitted with changes between the initial submission and the revised version highlighted.

Project Summary

Benin, Burkina Faso, Niger – Integration of climate change adaptation measures in the concerted management of the WAP transboundary complex: ADAPT-WAP

Implementing Entity: *OSS*
Project/Programme Execution Cost: USD 922,450
Total Project/Programme Cost: USD 9,710,000
Implementing Fee: USD 903,750
Financing Requested: USD 11,536,200

Project Background and Context:

The objective of the proposed project is to strengthen the resilience of ecosystems against climate change and improve the living conditions of the populations bordering the WAP complex through the establishment of a multi-risk Early Warning System and the implementation of concrete adaptation measures. The project will also consolidate the synergy between the three beneficiary countries by strengthening the sustainable and participatory management of the complex and natural resources by helping to resolve conflicts between different users.

The proposal includes four components:

Component 1: Integration of Climate Change and Emergency Plan (MREWS) aspects in the management of the WAP Complex (USD 360,000)

This component will deal with the integration of climate change aspects and of the Emergency Plan (MREWS) in the management tools of the WAP complex. This result will provide the institutional and legal required to implement the interventions of the project aimed at achieving different studies, concordant, leading to the development/updating of Master Development plan and to the action plan for the adaptation measures implementation.

Component 2: Design and implementation of a multi-hazard early warning system (drought, floods, and fires) (USD 2,300,000)

This component will establish the structure of a functioning, reliable and efficient early warning system at the WAP complex. The implementation of such an early warning system will help to minimize the negative impacts of natural disasters and with the development and implementation of a detailed contingency or emergency response plan. This plan will be made available to the various users and stakeholders in the WAP complex management.

Component 3: Improving the resilience of ecosystems and the livelihoods of populations and users through the implementation of concrete adaptation actions (USD 6,150,000)

Component three will undertake adaptation measures and actions aimed at maintaining the ecological equilibrium of the WAP complex and improving the resilience capacity of the local population. The main themes on which activities will focus are natural resources and ecosystems (water, soil, forest and pastoral ecosystems) as well as common social practices such as transhumance, overgrazing, and illegal logging. Indeed, the measures will focus on improving infrastructures for farmers, fishermen, and pastoralists through sylvopastoral and aquaculture management, the promotion of renewable energies, the establishment of a revolving fund.

Component 4: Awareness, communication and capacity building for concerted, integrated and sustainable management of the WAP Complex (USD 900,000)

This component is dedicated to information, communication and stakeholder's capacity building on key aspects of the project: climate change and EWS. To this end, it will be designed and implemented the information/awareness tools through well-identified information channels. This component is also focused on the design and implementation of capacity building tools for actors and visibility of Project actions. It will have a transversal aspect that will embrace the major issues and problems and will concern the different target groups.

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: REGIONAL PROJECT

Countries/Region: **Benin, Burkina Faso, Niger**
Project Title: **Integration of climate change adaptation measures in the concerted management of the WAP transboundary complex: ADAPT-WAP**
Thematic Focal Area**: Disaster risk reduction and early warning systems**
Implementing Entity: **Sahara and Sahel Observatory**
Executing Entities: **Benin: Centre nationale gestion des Réserves de Faune; Burkina Faso: La Direction Générale des Eaux et Forêts; Niger: La Direction Générale des Eaux, de l'Environnement et Forêts and Le Centre National de Suivi Environnemental et Ecologique**
AF Project ID: **AFR/RIE/DRR/2016/1**
IE Project ID: Requested Financing from Adaptation Fund (US Dollars): **11,536,200**
Reviewer and contact person: **Martina Dorigo** Co-reviewer(s): **Dirk Lamberts**
IE Contact Person**: Nabil Ben Khatra**

Review Criteria	Questions	Comments on 4 May 2018	OSS Responses (cf. Highlighted version for pages ref.)
Country Eligibility	1. Are all of the participating countries party to the Kyoto Protocol?	Yes. All three countries have ratified the Kyoto Protocol Benin, February 25, 2002 Niger, November 30, 2004 Burkina Faso on: March 31, 2005	
	2. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change?	Yes.	

Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	Yes, endorsement letters are enclosed in the proposal.	
	2. Does the regional project / programme support concrete adaptation actions to assist the participating countries in addressing the adverse effects of climate change and build in climate resilience, and do so providing added value through the regional approach, compared to implementing similar activities in each country individually?	The proposal includes a vulnerability assessment that describes how the W-Arly-Pendjari is threatened by climate change and recurrent natural disasters. Additionally, an analysis of how the anthropogenic factors (such as uncontrolled land clearing, agricultural and rangeland expansion, poaching, fires, mining exploration, population growth, increasing climate migration, unsustainable harvesting of non-timber forest products, soil and water pollution) contribute to threatening the ecosystems is provided. Illegal fishing is identified as one of the threat and obstacles, and is one of the activities that prohibited inside the WAP complex. **CR1:** Further elaborate on the adaptation reasoning behind the support to fishermen under output 3.1.5, provide a justification on the support for sustainable fishing.	**CR 1: pages 47/48** Climate change has certain negative impacts on natural resources and on fishing activities. The project will support small fishers to address the adverse effects of climate change. A text is added on pages 47/48.

	3. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy of the Fund?	Yes, this is demonstrated. The project aims to enable beneficiaries to develop income-generating micro-projects (IGAs) and access leveraged funds to implement them to generate benefits at the local level. Through the micro projects initiated by the project, local populations will be empowered and motivated to participate in community employment creation processes that will help develop a sense of ownership of their own livelihood enterprises. Additionally, the project contributes to climate regulation thorough the promotion of agro-forestry the delimitation and development of grazing areas, also an increased awareness of the importance of biodiversity conservation will result in sustainable extraction of non-renewable forest products. **CR 2**: Further justify how the project will ensure that rare and endangered species (Prosopis Africana as granary fork in Niger; Tamarindus indica as structural timber) will no longer be subjected to abuse.	**CR 2: Page 54** A text is added on page 54 to justify how ADAPT-WAP will ensure that rare and endangered species will no longer be subjected to abuse.
	4. Is the project / programme cost-effective and does the regional approach support cost-effectiveness?	Yes, the cost-effectiveness of this initiative is demonstrated. A cost-effectiveness analysis was included (part II of the full proposal and point D).	

	5. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments? If applicable, it is also possible to refer to regional plans and strategies where they exist.	Partially addressed. At national level the alignment with policies is well noted, but this is not demonstrated at regional level. **CR 3**: Include information on how the project will be aligned with the 2016-2025 management plan for the WAP complex.	**CR3: Page 68** The ADAPT WAP project is in keeping with the existing practices and strategies. In particular, the project will be in complementarity and in harmony with the development plan of the WAP complex (2017-2026). Text has been added to the page 68.
	6. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	This is not demonstrated. The information provided needs to be practical and relevant to the project activities, rather than at the level of the national constitution as is currently the case. Furthermore, relevant national standards are likely to include not only environmental permitting matters but also standards regarding public health, construction, food safety etc. **CAR 1**: Please identify the national technical standards in each country that are relevant to the project activities and describe how the project will comply with these standards.	**CAR 1 : pages 64-67** Section F of Part II has been revised and a text has been added on pages 64-67.

	7. Is there duplication of project / programme with other funding sources?	Addressed.	-
	8. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	Yes, component 4 of the project.	
	9. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations?	Yes, national consultations have been conducted (28 February 2018 in Burkina Faso, 2 March in Benin and 4 March in Niger). The outcomes of such consultations, which included also representatives of communities, are shared in the annex “Etude d’impacts environnemental et sociales”. **CR 4**: Due to the fact that the above-mentioned document was shared just in French, please include a summary of the main outcomes of the three national consultations, including gender considerations, in the part I “consultative process” of the proposal.	**CR4 : pages 70-73** Section I of Part II has been revised and a text has been added to show the main recommendations and results that culminated in the consultation workshops.
	10. Is the requested financing justified on the basis of full cost of adaptation reasoning?	Yes.	
	11. Is the project / program aligned with AF’s results framework?	Yes.	

	12. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	Partially addressed. It is well noted that the project implementation arrangement aims to strengthen ownership of the project by the protected area management authorities selected by the three countries as well as by communities. Nevertheless, the sustainability of the multi-hazard early warning system is not yet demonstrated. **CR 5**: Further elaborate on how the maintenance of the early warning system to multi-risk (EWS), will be achieved after the project finalization.	**CR5 : page 77** Measures and activities will be undertaken to maintain the EWS after completion of the project. Texts have been added to the page 77 of the document.
	13. Does the project / programme provide an overview of environmental and social impacts / risks identified?	Yes. However, the risks have not been identified in line with the Environmental and Social Policy of the Fund. The risks identification presented in the table on p. 76 does not describe the risks as required by the ESP: evidence-based and comprehensive. The risks have here largely been structured according to the 15 ESP principles. The conclusions regarding the absence of 'significant' negative impacts on p. 83 lack the required substantiation. The Environmental and Social Management Plan (ESMP) presented in section III.C does not link safeguard actions to identified risks, and can only relate to the limited number of activities that have already fully been identified. The project includes a large number of	

		activities that have not yet been identified to the stage where effective ESP risks identification is possible (so-called unidentified sub-projects, USPs). The use of USPs in this project is largely justified by the nature of these activities (e.g. the leverage fund). When a project contains such USPs, it must include an ESMP that specifies how, at what stage and by whom during project implementation for each USP risks of negative environmental and social impacts will be identified according to the 15 principles of the ESP. The ESIA report that is annexed to the proposal has used a methodology that does not generate outcomes in line with the ESP. It is generic and lacks the specific information on the environmental and social setting for the project activities that is needed for adequate risk identification. The ESMP that is included is equally generic and lacks implementation arrangements. The proposal does not include a grievance mechanism as required by the ESP. **CAR 2**: Please identify the environmental and social risks of the project in line with the ESP.	**CAR2 : pages 78-81** Section L of Part II has been revised and improved as requested. The environmental and social risks have been identified and anlysées according to the policy of the FA and in accordance with the PES. Details on pages 78-81. **CAR 3 : Page 86-92** Part C of Part III has been revised to take into account comments and

		CAR 3: Please prepare an Environmental and Social Management Plan (ESMP) that also will describe the process for ESP risk identification for the USPs, and how these risks will be addressed. **CAR 4**: Please include a grievance mechanism.	recommendations. The ESMP has been reviewed and the process of identification and treatment of USPs in relation to ESPs has been identified. Text has been added to the pages 86-92 (*more details are available on page 129 – 156 of the ESIA file*) **CAR 4 : Page 92-94** A text has been added to describe the grievance mechanism on pages 92-94.
	14. Does the project promote new and innovative solutions to climate change adaptation, such as new approaches, technologies and mechanisms?	Yes, the WAP adapt project brings innovations including: • new mechanism for taking into account the climate change adaptation dimension by encouraging regional consultation on the revision of the WAP guidance and management tools • Mastering the occurrence of climate risks through the introduction of a new technology, the three-risk early warning system (flood, drought, bush fires), including two climatic conditions on the WAP complex (part II and point B of the proposal)	
Resource Availability	1. Is the requested project / programme funding within the funding windows of	Yes, the requested funding is: USD 11,536,200 (the endorsed concept total requested funding was 8,550,000).	

	the pilot programme for regional projects/programmes?		
	2. Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 20 per cent of the total project/programme budget?	Yes, they amount to 17.2% of the total project budget.	
Eligibility of IE	3. Is the project/programme submitted through an eligible Multilateral or Regional Implementing Entity that has been accredited by the Board?	Yes.	

Implementation Arrangements	1. Is there adequate arrangement for project / programme management at the regional and national level, including coordination arrangements within countries and among them? Has the potential to partner with national institutions, and when possible, national implementing entities (NIEs), been considered, and included in the management arrangements?	Project management arrangements are provided. Please note that, whenever possible, the proponent should include the national implementing entities in the management arrangements. **CR 6:** Kindly inform if it is possible to partner with the national implementing entities in Benin – National Environment and Climate Fund, and in Niger – Banque Agricole.	**CR 6 : Page 85** Yes indeed, these two institutions can be the object of a possible collaboration with the project ADAPAT WAP especially to support the activities in favor of the local population, the pastors, the fishermen and the small farmers. Text has been added to the page 85.
	2. Are there measures for financial and project/programme risk management?	Yes, the proponent identified potential risks and proposed risks management measures.	

	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy of the Fund? Proponents are encouraged to refer to the Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy, for details.	Yes, the proposal contains an ESMP (table on p. 84-86). However, the measures for management of the ESP risks are not in line with the requirements of the ESP (please also see CAR, CAR and CAR above).	
	4. Is a budget on the Implementing Entity Management Fee use included?	Yes, it is included.	
	5. Is an explanation and a breakdown of the execution costs included?	The breakdown of the execution costs is included in table G.	
	6. Is a detailed budget including budget notes included?	A detailed budget is included. However, budget notes are not provided. **CAR 5**: Include budget notes (consultancies, travel, workshop, miscellaneous, etc.) for every project activity.	**CAR 5 : Pages 111-119** Budget notes have been added. Pages 111-119

	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators?	Yes.	
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	Yes.	
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	Yes, however it is noted that there are discrepancies between the project components and financing (table page 39-40) and table F. **CAR 6**: Please revise table F accordingly, as the text of the project objectives and outcomes should be consistent in these two tables.	**CAR 6 : Pages 108-109** Table F has been revised and corrected. See pages 108-109
	10. Is a disbursement schedule with time-bound milestones included?	Yes, the disbursement schedule is included.	

Technical Summary	The W-Arly-Pendjari (WAP) Complex is one of Africa's most important compositions of terrestrial transboundary ecosystems. It is considered as the largest and most important continuum of unharmed ecosystems in the West African savannah belt. Shared by Benin, Burkina and Niger, this network of protected areas consists of a number of areas with different status and protection regimes. In addition to the W Transboundary Biosphere Reserve (WTBR), shared by the three countries, the WAP complex covers the Arly National Park in Burkina Faso and the Pendjari National Park in Benin.

	The project aims at strengthening the resilience of ecosystems and improve populations' livelihoods within the WAP Complex, through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures. The overall objective of the project will be achieved through the following specific objectives: 1. Improve Strategic reference documents, i.e. development and management plans, by integrating climate change issue. 2. Improve populations' resilience through an Early Warning System and provide relevant and timely information on the occurrence of extreme weather events related to climate change in the WAP Complex and its adjacent areas. 3. Improve ecosystems' resilience (fauna and flora) and populations' livelihoods though the consolidation of infrastructure, for example transhumance corridors, drinking troughs, and anti-flood structures. 4. Ensure the sustainability of adaptation measures through the mobilization and awareness-raising of beneficiaries and partners to master the developed tools and execute the needed work. The following clarification requests are made: **CR1:** Further elaborate on the adaptation reasoning behind the support to fishermen under output 3.1.5, provide a justification on the support for sustainable fishing; **CR 2**: Further justify how the project will ensure that rare and endangered species (Prosopis Africana as granary fork in Niger; Tamarindus indica as structural timber) will no longer be subjected to abuse; **CR 3**: Include information on how the project will be aligned with the 2016-2025 management plan for the WAP complex; **CR 4**: Please include a summary of the main outcomes of the three national consultations, including gender considerations, in the part I "consultative process" of the proposal; **CR 5**: Further elaborate on how the maintenance of the early warning system to multi-risk (EWS), will be achieved after the project finalization; **CR 6**: Kindly inform if it is possible to partner with the national implementing entities in Benin – National Environment and Climate Fund, and in Niger – Banque Agricole. The following corrective action requests (CARs) are made: **CAR 1**: Please identify the national technical standards in each country that are relevant to the project activities and describe how the project will comply with these standards; **CAR 2**: Please identify the environmental and social risks of the project in line with the ESP; **CAR 3**: Please prepare an Environmental and Social Management Plan (ESMP) that also will describe the process for ESP risk identification for the USPs, and how these risks will be addressed; **CAR 4:** Please include a grievance mechanism; **CAR 5**: Include budget notes (consultancies, travel, workshop, miscellaneous, etc.) for every project activity; **CAR 6**: Please revise table F accordingly, as the text of the project objectives and outcomes should be consistent in these two tables.
Date:	7 May 2018

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: REGIONAL PROJECT

Countries/Region: **Benin, Burkina Faso, Niger**
Project Title: **Integration of climate change adaptation measures in the concerted management of the WAP transboundary complex: ADAPT-WAP**
Thematic Focal Area**: Disaster risk reduction and early warning systems**
Implementing Entity: **Sahara and Sahel Observatory**
Executing Entities: **Benin: Centre nationale gestion des Réserves de Faune; Burkina Faso: La Direction Générale des Eaux et Forêts; Niger: La Direction Générale des Eaux, de l'Environnement et Forêts and Le Centre National de Suivi Environnemental et Ecologique**
AF Project ID: **AFR/RIE/DRR/2016/1**
IE Project ID: Requested Financing from Adaptation Fund (US Dollars): **11,536,200**
Reviewer and contact person: **Martina Dorigo** Co-reviewer(s): **Dirk Lamberts**
IE Contact Person**: Nabil Ben Khatra**

Review Criteria	Questions	Comments on 4 May 2018	Comments on 22 May 2018
Country Eligibility	3. Are all of the participating countries party to the Kyoto Protocol?	Yes. All three countries have ratified the Kyoto Protocol Benin, February 25, 2002 Niger, November 30, 2004 Burkina Faso on: March 31, 2005	
	4. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change?	Yes.	

Project Eligibility	15. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	Yes, endorsement letters are enclosed in the proposal.	
	16. Does the regional project / programme support concrete adaptation actions to assist the participating countries in addressing the adverse effects of climate change and build in climate resilience, and do so providing added value through the regional approach, compared to implementing similar activities in each country individually?	The proposal includes a vulnerability assessment that describes how the W-Arly-Pendjari is threatened by climate change and recurrent natural disasters. Additionally, an analysis of how the anthropogenic factors (such as uncontrolled land clearing, agricultural and rangeland expansion, poaching, fires, mining exploration, population growth, increasing climate migration, unsustainable harvesting of non-timber forest products, soil and water pollution) contribute to threatening the ecosystems is provided. Illegal fishing is identified as one of the threat and obstacles, and is one of the activities that prohibited inside the WAP complex. **CR1:** Further elaborate on the adaptation reasoning behind the support to fishermen under output 3.1.5, provide a justification on the support for sustainable fishing.	**CR 1:** Addressed. Additional information provided on pages 47-48, strengthened the rationale for providing support to fishermen, which in turn can contribute to reducing pressure on the water resources of the WAP complex.

	17. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy of the Fund?	Yes, this is demonstrated. The project aims to enable beneficiaries to develop income-generating micro-projects (IGAs) and access leveraged funds to implement them to generate benefits at the local level. Through the micro projects initiated by the project, local populations will be empowered and motivated to participate in community employment creation processes that will help develop a sense of ownership of their own livelihood enterprises. Additionally, the project contributes to climate regulation thorough the promotion of agro-forestry the delimitation and development of grazing areas, also an increased awareness of the importance of biodiversity conservation will result in sustainable extraction of non-renewable forest products. **CR 2**: Further justify how the project will ensure that rare and endangered species (Prosopis Africana as granary fork in Niger; Tamarindus indica as structural timber) will no longer be subjected to abuse.	**CR 2:** Addressed. It is noted that both species will be recommended for reforestation and agroforestry activities, as well as pastoral improvement activities will help reducing their consumption for livestock purposes.
	18. Is the project / programme cost-effective and does the regional approach support cost-effectiveness?	Yes, the cost-effectiveness of this initiative is demonstrated. A cost-effectiveness analysis was included (part II of the full proposal and point D).	

	19. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments? If applicable, it is also possible to refer to regional plans and strategies where they exist.	Partially addressed. At national level the alignment with policies is well noted, but this is not demonstrated at regional level. **CR 3**: Include information on how the project will be aligned with the 2016-2025 management plan for the WAP complex.	**CR3:** Addressed. The proponent shared additional information on the alignment of this project with the objectives and the management priorities of the regional development plan of the WAP complex (2017-2026). Nevertheless, this information should have been added under section E “Consistency with development strategies”.
	20. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	This is not demonstrated. The information provided needs to be practical and relevant to the project activities, rather than at the level of the national constitution as is currently the case. Furthermore, relevant national standards are likely to include not only environmental permitting matters but also standards regarding public health, construction, food safety etc. **CAR 1**: Please identify the national technical standards in each country that are relevant to the project activities and describe how the project will comply with these standards.	**CAR 1:** Addressed.

	21. Is there duplication of project / programme with other funding sources?	Addressed.	-
	22. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	Yes, component 4 of the project.	

	23. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations?	Yes, national consultations have been conducted (28 February 2018 in Burkina Faso, 2 March in Benin and 4 March in Niger). The outcomes of such consultations, which included also representatives of communities, are shared in the annex “Etude d’impacts environnemental et sociales”. **CR 4**: Due to the fact that the above-mentioned document was shared just in French, please include a summary of the main outcomes of the three national consultations, including gender considerations, in the part I “consultative process” of the proposal.	**CR4:** Adequately addressed. Information provided in pages 70-73 specify which stakeholders have been consulted, and which were the outcomes of those consultation meetings. It is noted that women attended these consultation workshops, and one of the points discussed focused on the role of women and youth in the project implementation. Likewise, it is noted that the proponent will implement activities to protect the transhumance corridors around the WAP Complex, used by indigenous people, nevertheless the proposal did not specify if they participated in the consultations. The fact that the vulnerable stakeholders took part in the consultations, suggests that ESP risks issues could have been addressed during consultation.
	24. Is the requested financing justified on the basis of full cost of adaptation reasoning?	Yes.	

	25. Is the project / program aligned with AF's results framework?	Yes.	
	26. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	Partially addressed. It is well noted that the project implementation arrangement aims to strengthen ownership of the project by the protected area management authorities selected by the three countries as well as by communities. Nevertheless, the sustainability of the multi-hazard early warning system is not yet demonstrated. **CR 5**: Further elaborate on how the maintenance of the early warning system to multi-risk (EWS), will be achieved after the project finalization.	**CR5:** Addressed. Through the complementary information provided on page 77, it is noted that the EWS will be integrated into existing governmental institutions of the three countries. The project investments will be integrated into the usual activities of the local and government institutions of Niger, Burkina Faso and Benin, through public funding.
	27. Does the project / programme provide an overview of environmental and social impacts / risks identified?	Yes. However, the risks have not been identified in line with the Environmental and Social Policy of the Fund. The risks identification presented in the table on p. 76 does not describe the risks as required by the ESP: evidence-based and comprehensive. The risks have here largely been structured according to the 15 ESP principles. The conclusions regarding the absence of 'significant' negative impacts on p. 83 lack the	

		required substantiation. The Environmental and Social Management Plan (ESMP) presented in section III.C does not link safeguard actions to identified risks, and can only relate to the limited number of activities that have already fully been identified. The project includes a large number of activities that have not yet been identified to the stage where effective ESP risks identification is possible (so-called unidentified sub-projects, USPs). The use of USPs in this project is largely justified by the nature of these activities (e.g. the leverage fund). When a project contains such USPs, it must include an ESMP that specifies how, at what stage and by whom during project implementation for each USP risks of negative environmental and social impacts will be identified according to the 15 principles of the ESP. The ESIA report that is annexed to the proposal has used a methodology that does not generate outcomes in line with the ESP. It is generic and lacks the specific information on the environmental and social setting for the project activities that is needed for adequate risk identification. The ESMP that is included is equally generic and lacks implementation arrangements. The proposal does not include a grievance mechanism as required by the	**CAR2:** Partially addressed. The environmental and social risks identification section (II.L) has been

		ESP. **CAR 2**: Please identify the environmental and social risks of the project in line with the ESP. **CAR 3**: Please prepare an Environmental and Social Management Plan (ESMP) that also will describe the process for ESP risk identification for the USPs, and how these risks will be addressed. **CAR 4**: Please include a grievance mechanism.	completed in a near-exemplary manner. However, the identification of the risks and impacts should be presented in more detail, and quantified where possible for the ESP principles where risks are found to be significant or constituting a major disturbance. This is in particular the case for the ESP principles of natural habitat protection and biodiversity conservation. The risk identification for the principle on Indigenous peoples lacks a description of the risks, although involvement of indigenous peoples in the project implementation has been described. The mitigation measures that are presented need to be derived from the impact assessment and should be commensurate to the risks that have been identified. This information is not presented. • There are some inconsistencies between the risks identified in II.L and the management and safeguard measures presented in III.C. • Mitigation measures for risks for indigenous peoples should refer to FPIC. • Risks identification for natural habitats should include risk of secondary impacts as a consequence of opening up road access to large parts of previously less or not accessible parts of the protect areas, thus

			also increasing the risks of logging, poaching and encroachment. The proposed mitigation (compensatory forestation) needs to be shown to be adequate and effective compared to the impacts. • Similar finding for the principle on biodiversity conservation • The risks in terms of lands and soil conservation needs to be further described, and safeguard measures identified accordingly **CAR 3:** Not adequately addressed. (See further under point 3 of Implementation arrangements) **CAR 4:** Not adequately addressed. A grievance mechanism has been included in section III.C. However, the grievance mechanism is non-specific and is announced to be developed during project implementation. A sufficiently finalized grievance mechanism should be included in the proposal, including information for aggrieved parties to directly contact the AF.
	28. Does the project promote new and innovative solutions to climate change adaptation, such as new approaches,	Yes, the WAP adapt project brings innovations including: • new mechanism for taking into account the climate change adaptation dimension by encouraging regional consultation	

	technologies and mechanisms?	on the revision of the WAP guidance and management tools • Mastering the occurrence of climate risks through the introduction of a new technology, the three-risk early warning system (flood, drought, bush fires), including two climatic conditions on the WAP complex (part II and point B of the proposal)	
Resource Availability	4. Is the requested project / programme funding within the funding windows of the pilot programme for regional projects/programmes?	Yes, the requested funding is: USD 11,536,200 (the endorsed concept total requested funding was 8,550,000).	
	5. Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 20 per cent of the total project/programme budget?	Yes, they amount to 17.2% of the total project budget.	
Eligibility of IE	6. Is the project/programme submitted through an eligible Multilateral or Regional Implementing Entity that has been accredited by the Board?	Yes.	

Implementation Arrangements	11. Is there adequate arrangement for project / programme management at the regional and national level, including coordination arrangements within countries and among them? Has the potential to partner with national institutions, and when possible, national implementing entities (NIEs), been considered, and included in the management arrangements?	Project management arrangements are provided. Please note that, whenever possible, the proponent should include the national implementing entities in the management arrangements. **CR 6:** Kindly inform if it is possible to partner with the national implementing entities in Benin – National Environment and Climate Fund, and in Niger – Banque Agricole.	**CR 6:** Addressed. The proponent started initial consultations with the two NIEs in Benin and Niger. At project inception's phase, further discussions will be conducted to agree on the scope and concretize this potential collaboration.
	12. Are there measures for financial and project/programme risk management?	Yes, the proponent identified potential risks and proposed risks management measures.	

	13. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy of the Fund? Proponents are encouraged to refer to the Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy, for details.	Yes, the proposal contains an ESMP (table on p. 84-86). However, the measures for management of the ESP risks are not in line with the requirements of the ESP (please also see CAR, CAR and CAR above).	**CAR 3:** Not adequately addressed. On p. 88 of the proposal, a methodology is presented for the ESP risks identification of the USPs. The methodology is not in line with the AF ESP. This requires that risks identification is done according to the 15 principles of the ESP, in a comprehensive manner, that findings are presented based on evidence, and that safeguarding measures need to be commensurate to the risks identified. The process described on p. 92 does not identify roles and responsibilities for risks identification according to the ESP (e.g. PNU roles limited to complying with national ESIA requirements only).
	14. Is a budget on the Implementing Entity Management Fee use included?	Yes, it is included.	
	15. Is an explanation and a breakdown of the execution costs included?	The breakdown of the execution costs is included in table G.	
	16. Is a detailed budget including budget notes included?	A detailed budget is included. However, budget notes are not provided. **CAR 5**: Include budget notes (consultancies, travel, workshop, miscellaneous, etc.) for every project activity.	**CAR 5:** Addressed.

	17. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators?	Yes.	
	18. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	Yes.	
	19. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	Yes, however it is noted that there are discrepancies between the project components and financing (table page 39-40) and table F. **CAR 6**: Please revise table F accordingly, as the text of the project objectives and outcomes should be consistent in these two tables.	**CAR 6:** Addressed.
	20. Is a disbursement schedule with time-bound milestones included?	Yes, the disbursement schedule is included.	

Technical Summary	The W-Arly-Pendjari (WAP) Complex is one of Africa's most important compositions of terrestrial transboundary ecosystems. It is considered as the largest and most important continuum of unharmed ecosystems in the West African savannah belt. Shared by Benin, Burkina and Niger, this network of protected areas consists of a number of areas with different status and protection regimes. In addition to the W Transboundary Biosphere Reserve (WTBR), shared by the three countries, the WAP complex covers the Arly National Park in Burkina Faso and the Pendjari National Park in Benin.

	The project aims at strengthening the resilience of ecosystems and improve populations' livelihoods within the WAP Complex, through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures. The overall objective of the project will be achieved through the following specific objectives: 1. Improve Strategic reference documents, i.e. development and management plans, by integrating climate change issue. 2. Improve populations' resilience through an Early Warning System and provide relevant and timely information on the occurrence of extreme weather events related to climate change in the WAP Complex and its adjacent areas. 3. Improve ecosystems' resilience (fauna and flora) and populations' livelihoods though the consolidation of infrastructure, for example transhumance corridors, drinking troughs, and anti-flood structures. 4. Ensure the sustainability of adaptation measures through the mobilization and awareness-raising of beneficiaries and partners to master the developed tools and execute the needed work. The following clarification requests are made: **CR1:** Further elaborate on the adaptation reasoning behind the support to fishermen under output 3.1.5, provide a justification on the support for sustainable fishing; **CR 2**: Further justify how the project will ensure that rare and endangered species (*Prosopis Africana* as granary fork in Niger; *Tamarindus Indica* as structural timber) will no longer be subjected to abuse; **CR 3**: Include information on how the project will be aligned with the 2016-2025 management plan for the WAP complex; **CR 4**: Please include a summary of the main outcomes of the three national consultations, including gender considerations, in the part I "consultative process" of the proposal; **CR 5**: Further elaborate on how the maintenance of the early warning system to multi-risk (EWS), will be achieved after the project finalization; **CR 6**: Kindly inform if it is possible to partner with the national implementing entities in Benin – National Environment and Climate Fund, and in Niger – Banque Agricole. The following corrective action requests (CARs) are made: **CAR 1**: Please identify the national technical standards in each country that are relevant to the project activities and describe how the project will comply with these standards; **CAR 2**: Please identify the environmental and social risks of the project in line with the ESP; **CAR 3**: Please prepare an Environmental and Social Management Plan (ESMP) that also will describe the process for ESP risk identification for the USPs, and how these risks will be addressed; **CAR 4:** Please include a grievance mechanism; **CAR 5**: Include budget notes (consultancies, travel, workshop, miscellaneous, etc.) for every project activity; **CAR 6**: Please revise table F accordingly, as the text of the project objectives and outcomes should be consistent in these two tables.

	The final technical review finds that some of the CRs and CARs previously raised have not been adequately addressed. Most of them, specifically pertain to the compliance with the ESP as follow: **CR3:** The project alignment with the regional development plan of the WAP complex (2017-2026) is demonstrated, however the information provided should be added under section E of the proposal "Consistency with development strategies"; **CAR 2**: The identification of the risks and impacts should be presented in more detail, and quantified where possible for the ESP principles where risks are found to be significant or constituting a major disturbance. This is in particular the case for the ESP principles of natural habitat protection and biodiversity conservation; **CAR 3**: The methodology presented for the ESP risks identification of the USPs, is not in line with the AF ESP. This requires that risks identification is done according to the 15 principles of the ESP, in a comprehensive manner. Furthermore, the process described does not identify roles and responsibilities for risks identification according to the ESP; **CAR 4**: A grievance mechanism has been included in section III.C. However it should be better informed, as a sufficiently finalized grievance mechanism should be included in the proposal and should present information for aggrieved parties to directly contact the AF.
Date:	24 May 2018

ADAPTATION FUND

REGIONAL PROJECT PROPOSAL

PART I: PROJECT/PROGRAMME INFORMATION

Project title	Integration of climate change adaptation measures in the concerted management of the WAP transboundary complex: ADAPT-WAP
Countries :	Benin, Burkina Faso, Niger
Subjects of interests[1]:	Disaster risk reduction and early warning system
Type of implementing body :	RIE
Entity of implementation	Sahara and Sahel Observatory (OSS)
Executing Entities :	Regional Management Unit (RMU) hosted by the OSS
(Regional coordination)	National Management Units (NMUs):
	Benin: National Wildlife Reserve Management Centre (CENAGREF)
	Burkina Faso: General Directorate of Water and Forests (DGEF)
	Niger: General Directorate of Water and Forests (DGEF)
Amount of funding requested	US$ 11,536,200

[1]Subjects of interest: Food security; disaster risk reduction and early warning systems; transboundary water management; innovation in adaptation financing.

CONTENTS

Table of figures & tables

1. Project Background and Context

1.1. Regional Context

The West African Economic and Monetary Union (WAEMU) is a sub-regional area composed of 8 countries, among which are Benin, Burkina Faso, and Niger. The areas of these three countries are as follows: (figure 1) : 112,622 km2 (Benin), 270,764 km² (Burkina Faso) and 1, 267, 000 km² (Niger) with a population respectively of 10 million inhabitants (Benin, RGHP 3, 2012), 19,632,147 inhabitants (Burkina) and 20,751,801 inhabitants (Niger) and a population growth rate that varies from 3.16% / year to 3.90% / year.

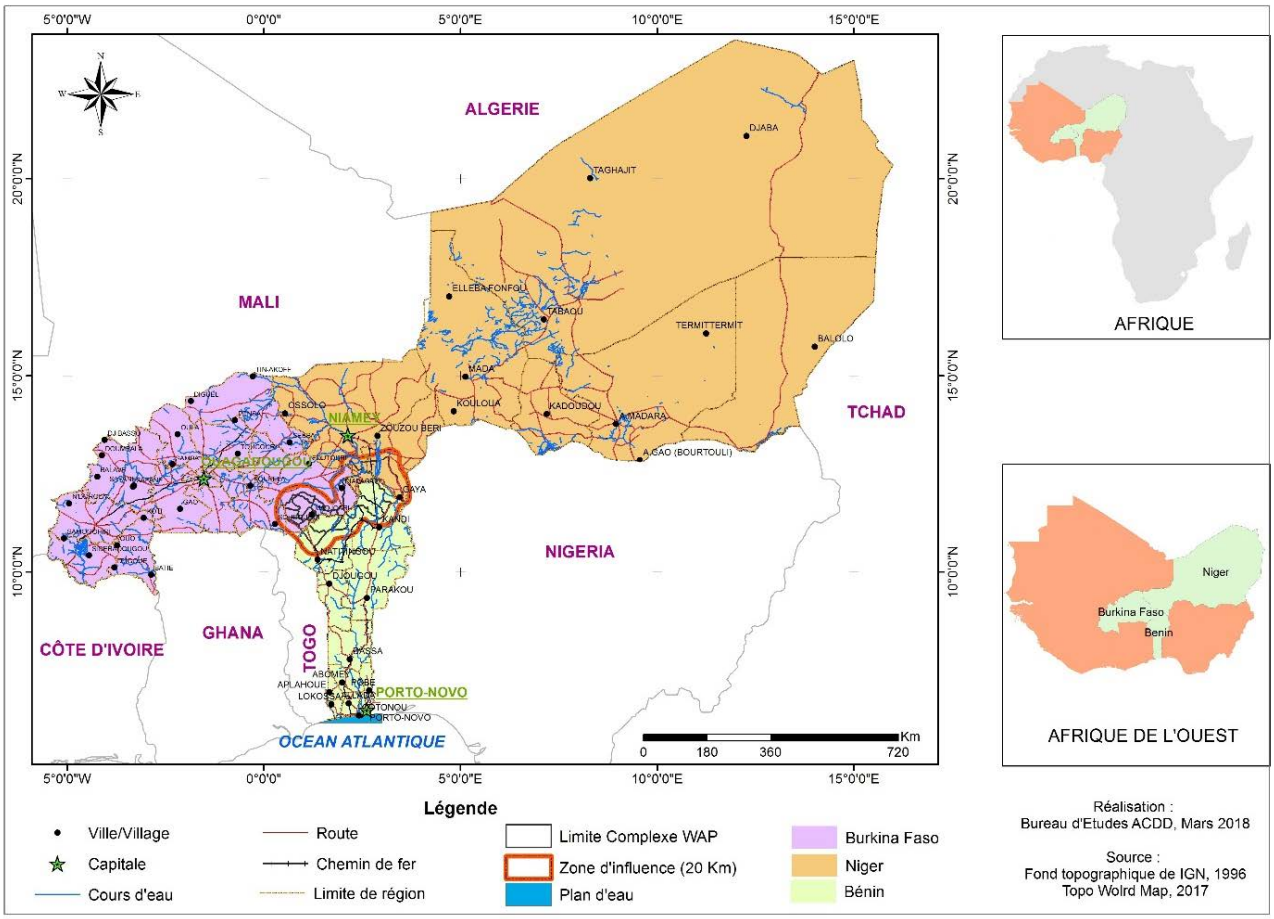


Figure 1: Geographical location of WAP Complex countries

The population density in 2017 varied from 16.38 inhabitants/km² (Niger) to 82 inhabitants/km² (Benin) with a growth rate ranging between 2.28 to 3.5% per year. The majority of the population in each of these countries resides in the centre and the south of the country where the different national capitals are located. The economies of these countries are largely based on re-exports and transit trade with Nigeria and neighboring countries, export crops, cotton, groundnuts, livestock products and oil and gold mining. Gross national income in 2016 amounted to US$2,170 per capita/year for Benin, US$1,680 per capita/year for Burkina Faso and US$970 per capita/year for Niger in 2016 (World Bank, 2017, IBRD, 2016). According to the Human Development Index (2016), these countries occupied respectively: Benin (167th), Burkina Faso (185th) and Niger (187th). Due to their This poor performance, these three countries are classified as countries with a low level of human development.

1.2. The eco-regional context of the project area (WAP complex)

Located at the junction of the three States, Benin, Burkina Faso and Niger, the "WAP" region, including its five National Parks (Pendjari, Arly, W/Benin, W/Burkina Faso, W/Niger) represents the northernmost part of the vast Sudanian Savannahs which cover the entire eco-climatic space

interspersed between three eco-climatic zones which give it a particular and complex dynamic, namely : Sahelian Savannah (<600 mm precipitation/year), Sudanese Savannah (600-1200 mm/year) and Guinean Savannah (>1200 mm/year). The WAP Park Complex is considered as the largest and most important continuum of intact ecosystems in the West African Savannah belt. The WAP Complex represents an exceptional heritage and the main refuge in West Africa for enormous herds of antelopes, elephants, buffaloes and generally, the large emblematic terrestrial mammals that characterized the continent less than a century ago.

Despite this obvious patrimonial value, the WAP Protected Areas Complex and its Savannah ecosystems have been facing, over two decades, real degradation mechanisms, initially due to the imbalance between exploitation, which is often illegal, and availability of natural resources, in addition to the adverse effects of desertification and deterioration of climatic conditions, mainly due to natural phenomena such as fluctuation in rainfall and drought.

To halt the process, a proactive and effective policy to strengthen monitoring, as well as the implementation of appropriate management practices (creation of trails, tourist infrastructure building, etc.), was implemented and enabled first the Pendjari Park in the 1980s, then Arly Park in the 1990s and finally the W Park starting from 2001, to decrease anthropic pressure. However, a programme of support to the concerted countries and WAP for a regional approach that will take into account climate change issue through the development and the implementation of a regional adaptation strategy and/or an adaptation and capacity building plan aimed at the Complex's adjacent populations and ecosystems is urgently needed given the importance of the issues at stake.

This regional adaptation strategy and/or adaptation/capacity building plan will enable the sub-regional countries to provide a promising example to influence the global conservation policy and have a set of protected areas which may reflect their will to conserve and enhance the essential modern biodiversity, such as the major parks and ecological systems for East and South Africa.

1.2.1. Description of the ADAPT-WAP Project intervention area

The W-Arly-Pendjari Complex (figure 2) is limited:

- in the North by the W Niger National Park, the hunting areas of Tapoa Djerma, Kourtiagou, Koakrana, Pagou-Tandougou, Ouamou and the towns of Diapaga, Tansarga, Logobou and Tambaga;
- in the South by the hunting areas of Pendjari and Atacora (Konkombri and Mékrou hunting areas), the Atacora range, Banikoara township;
- in the East by the hunting zone of Djona and the towns of Karimama and Malanville;
- in the West by the hunting areas of Singou Septentrional, Pama Nord, Pama Centre Nord, Konkombouri, Pama Sud, and the town of Madjoari:

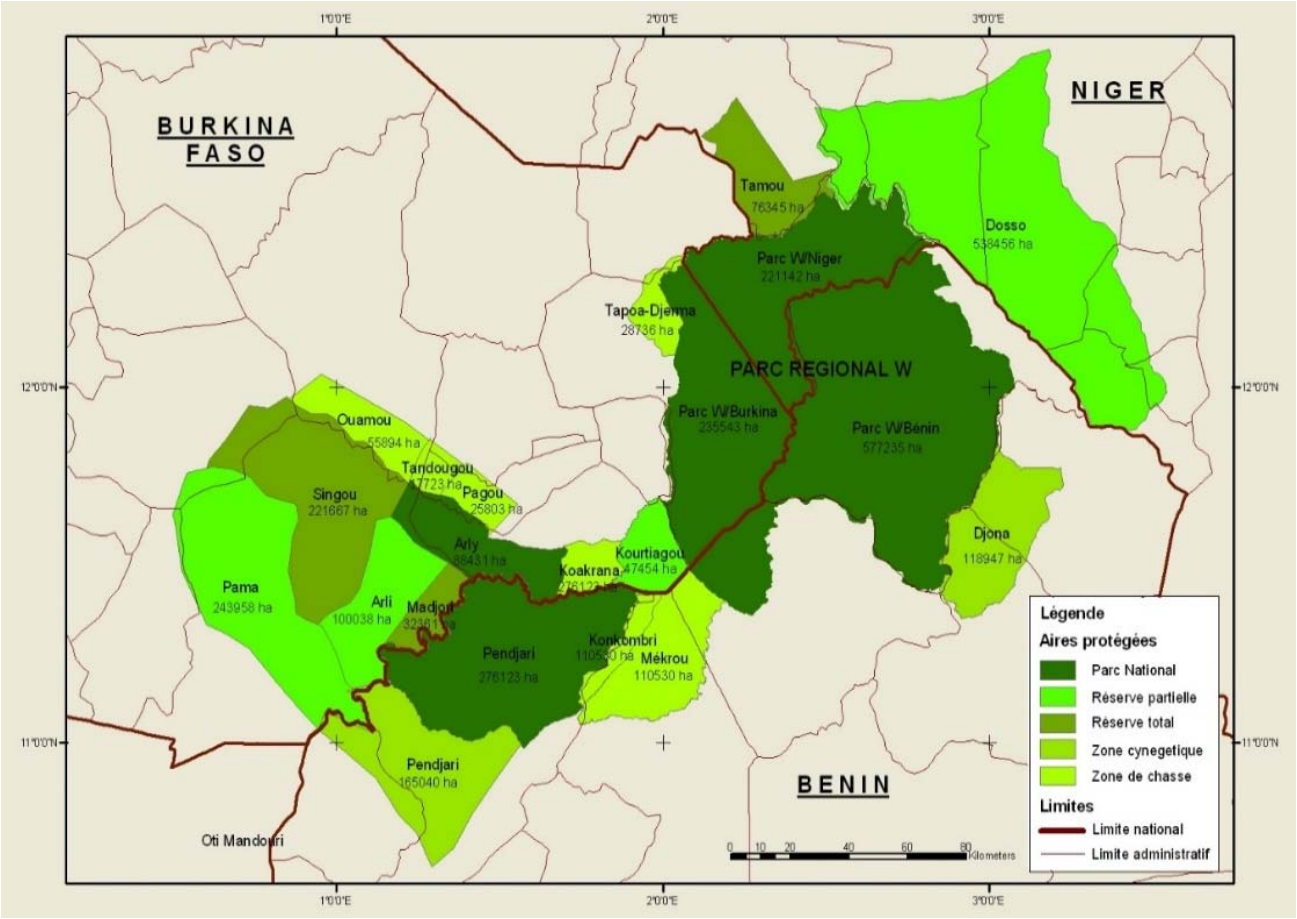


Figure 2 Location of the WAP Complex

1.2.2. Components of the WAP complex

The W-Arly-Pendjari Complex is one of the largest protected areas in the West African Savannah biogeographical province. It represents one of the three main ecological zones of this province and ensures the transition between the Sahel and the forest.

The "WAP" complex is composed of two units:

- The W Transboundary Biosphere Reserve (W-TBR) shared by the three countries (Benin, Burkina Faso, and Niger).
- The Arly-Pendjari Transboundary Block (APTB) including the Arly Park in Burkina Faso and the Pendjari Biosphere Reserve in Benin.

The WTBR covers an area of 10300 km². It consists of the Transboundary Biosphere Reserves W of Benin, Burkina Faso, and Niger. It is located between latitudes 11° and 12°35 north latitude and longitudes 2° and 3°50 east longitudes in West Africa.

The Benin part of the W Transboundary Biosphere Reserve (TBR/Benin) was created on December 3rd, 1952 by Order N°7640 S.E./F of the High Commissioner of the Republic, Governor General of West Africa, classifying the total reserve of the W of Niger (Kandi Circle). This decree is a classified national forest and a total wildlife reserve known as the "W of Niger's total wildlife reserve" covering an area of 525,400 hectares. The TBR/Benin is located at the extreme north-west of Benin, between latitudes 11°20' and 12°23' N and longitude 02°04' and 03°05' E. It is bordered to the north by the Karimama town, to the south by the Banikoara town, to the east by the Alibori River and the towns of Kandi and Malanville, and to the west by the Mekrou River.

It includes:

- the W National Park (563,280 ha);
- the hunting zone of Djona (115 200 ha);
- the eastern part of the Atacora hunting zone, known as the Mekrou hunting zone (83 958 ha).

The Burkinabe part, Burkina Faso's W Transboundary Biosphere Reserve (WTBR/BF) was created on 14 April 1953 by Order N°2606 S.E./F of the High Commissioner of the Republic, Governor General of West Africa, classifying the total reserve of "W of Niger", (Fada N'Gourma Circle). This decree represents a classified national forest and a total wildlife reserve known as the "Total Wildlife Reserve of the W of Niger" with an area of 350,000 hectares. The WTBR/BF is located in the province of Tapoa, located in the eastern part of the country and extending between parallels 11°24.728' and 12°22.435' N, meridians 1°50.446' and 2°22.320' E. The WTBR/BF includes:

- a central area consisting of the W National Park (2 350 km²);
- a buffer zone which includes the Kourtiagou partial wildlife reserve (510 km²) and the Tapoa Djerma sport hunting area (300 km²); an area of 810 km².

The village hunting areas of hunting interest on the periphery of the sport hunting concessions are an integral part of this transition area, which is the most anthropized areas (agriculture, livestock) extending from the outer limit of the buffer zone over a radius of several tens of kilometers. This hence concerns the rest of the municipalities of Logobou, Tambaga, Tansarga, and Diapaga.

Finally, the Nigerien part, Niger-W the Transboundary Biosphere Reserve W of Niger (WTBRTBR/Niger) was created on 25 June 1953 by Order N°4676 S.E/F of the High Commissioner of the Republic, Governor General of West Africa, classifying the total reserve of the "W of Niger", (Cercle de Fada N'Gourma). The decree is a classified national forest and a total wildlife reserve known as the "Total Wildlife Reserve of the W of Niger" with an area of 330,000 hectares. The WTBRTBR/Niger is located in the extreme south-west of Niger (Tillabéri Department, Say District) between latitudes 11°54' and 12°35' North and longitudes 02°04' and 02°50' East. It covers an area of 220 000 hectares, or 0.2% of the total area of the Republic of Niger.

The Arly-Pendjari Transboundary Block (APTB) forms the western part of the WAP Complex (W-Arly-Pendjari). This block belongs to the largest Sudano-Sahelian Savannah ecosystem in West Africa. The Arly-Pendjari bloc is one of the components of the WAP complex. It consists of the Arly National Park in Burkina Faso and the Pendjari National Park and its adjacent hunting areas in Benin.

The Arly National Park (ANP) is located in southeast Burkina Faso in the eastern region, between longitudes 1°10'27" and 1°43'48" East and latitudes 11°14'51" and 11°42'36" North (OFINAP, 2015). It covers an area of 217,930 hectares and is limited:

- in the North by the hunting areas of Pagou-Tandougou and Wamou;
- in the South by the Pama-Sud hunting zone and the Pendjari National Park (Benin);
- to the East by the Koakrana hunting zone;
- in the West by the hunting zones of North Singou, North Pama, North-Central Pama and Konkombouri.

Pendjari National Park (PNP) and its adjacent hunting areas (Konkombri, Porga, and Batia) are located in the extreme north-west of Benin in Tanguiéta and Matéri communes. It is located between latitudes 10°30' and 11°30' North, and longitudes 0°50' and 2°00' East. It is located in the department of Atacora. The Pendjari National Park is bordered on the north by the Madjori Total Reserve, the Arly Total Reserve and the Koakrana Partial Reserve (in Burkina Faso) and to the south by the hunting zone of the Pendjari. The eastern and western limits are respectively the hunting zone of Atacora and the partial reserve of Arly.

1.3. Physical characteristics of the project area: WAP complex

1.3.1. Climate

The WAP Complex region is subject to a continental climate. However, there is a climatic and bioclimatic difference between the three countries:

In Benin, the TBR-W/Benin region is characterized by a Sudano-Sahelian climate. Over the period from 1970 to 2014, the average annual rainfall at Kandi is 969, 11 mm, with an average temperature of 28.47°C. Referring to the climatic diagram (Figure 3), two seasons characterize the TBR-W/Benin region:

- a dry season (from March to mid-May) corresponding to a warm period with an average monthly temperature oscillating between 30 and 34°C and peaks reaching 40°C; a cool period from October to February with average monthly temperatures around 25°C and minima reaching 12°C. This is the harmattan period;
- a rainy season (from mid-May to October) with an average monthly temperature of around 26°C.

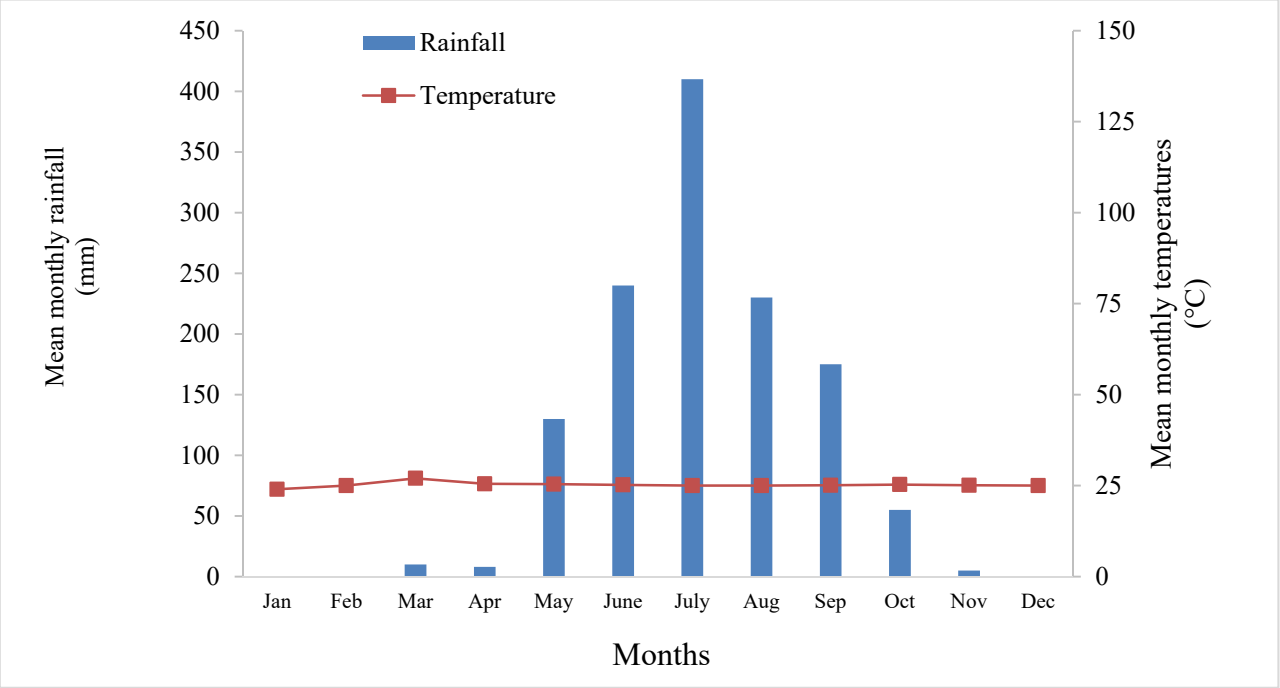


Figure 3: Kandi's ombrothermal diagram (ASECNA, 2014)

The average daily duration of sunshine is 8.19 hours. This sunstroke is highest in November and lowest in August. The sunniest period goes from October to May and the least sunny from June to September. Relative humidity is highest from April to November and lowest from May to October. Monthly averages vary from 26% in February to 80% in August. From December to April, the average relative humidity is less than 50%.

The Pendjari Biosphere Reserve (PBR) belongs to the Sudanian climate region, with a unimodal rainfall regime from mid-March to mid-September (Figure 4). Annual rainfall ranges between 900 and 1200 mm (ASECNA, 2015). The average monthly humidity is below 10% during the dry season and exceeds 90% during the rainy season. The average temperature is around 25°C. The high temperatures are recorded between January and March and a decline is observed from July to December (low sunshine, high soil moisture).

During the dry season, temperature differences between night and day are more pronounced. The minimum and maximum temperatures are around 21 °C and 40 °C respectively. During the cool dry season (Harmattan[2]), average monthly temperatures vary between 25°C and 28°C. The minimum temperatures can reach 15°C or even 7°C locally near rivers and water bodies from mid-January to mid-February during the night.

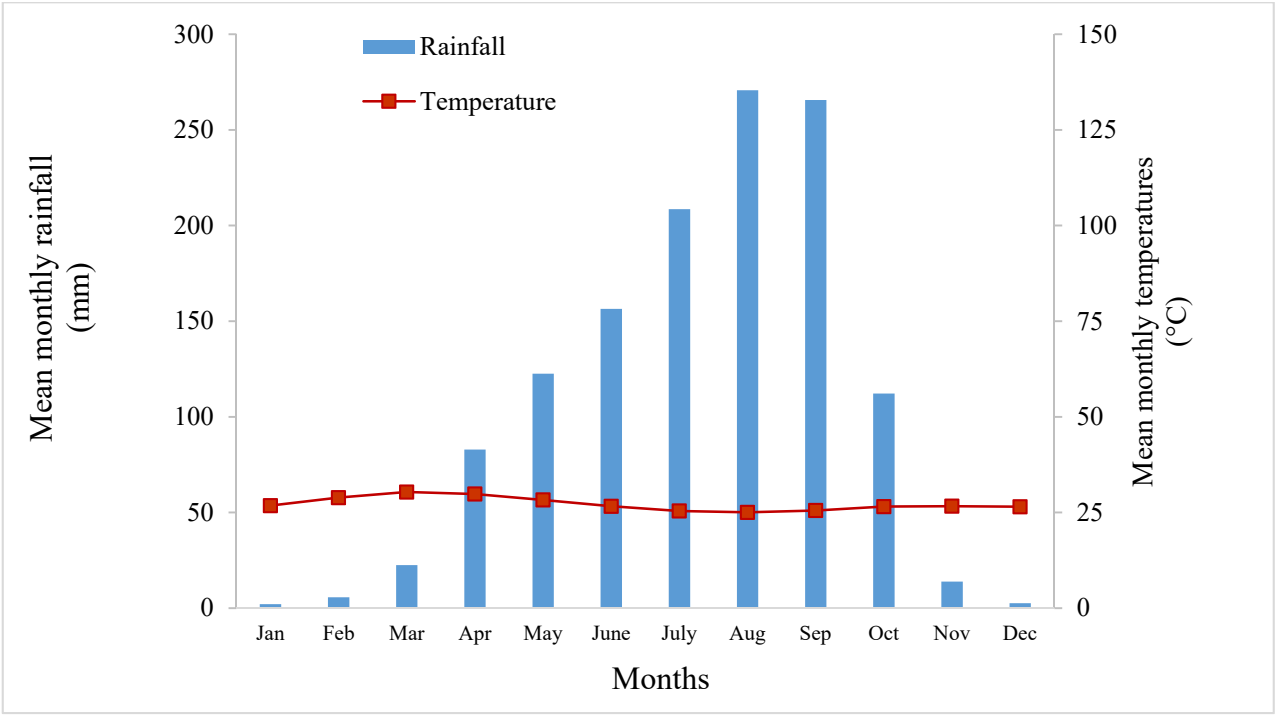


Figure 4: Natitingou ombrothermal diagram, Tanguiéta (ASECNA, 2017)

Furthermore, the analysis of data from the Natitingou synoptic station covering the Pendjari National Park area reveals an upward trend in maxima and minima temperature. This increase goes from an average of 0.6ºC for maximum temperatures and 0.8ºC for minimum temperatures.

In Burkina Faso: The WAP Complex sector in Burkina Faso is of Sudanian climate, characterized by a rainy season (June to October) and a dry season (November to April). From the climate diagram (Figure 5), two seasons can be distinguished: (1) a rainy season (from June to October) with the maximum rainfall recorded in July and August. A relatively more arid climatic variant characterizes the northern part of the park while the extreme south tends to be a little wetter. The current average annual rainfall recorded at Diapaga is 760 mm, thus classifying the peripheral zone of Park W in the northern Sudanian climate zone with rainfall varying between 750 mm and 950 mm (Fontès and Guinko, 1995); (2) a dry season (from November to April) characterized by a scarcity of rainfall with an average temperature of up to 33°C. With reference to the climatic data recorded at Diapaga, the average minimum temperature is around 14.9°C in January, whereas in March, April, May and June, and average maximum temperatures is around 35°C, with peaks sometimes reaching 40°C.

[2] A dry, dusty easterly or northeasterly wind on the West African coast, occurring from December to February. The temperature is cold in most places, but can also be hot in certain places, depending on local circumstances. The Harmattan blows during the dry season, which occurs during the lowest-sun months. On its passage over the Sahara, the harmattan picks up fine dust and sand particles (between 0.5 and 10 microns).

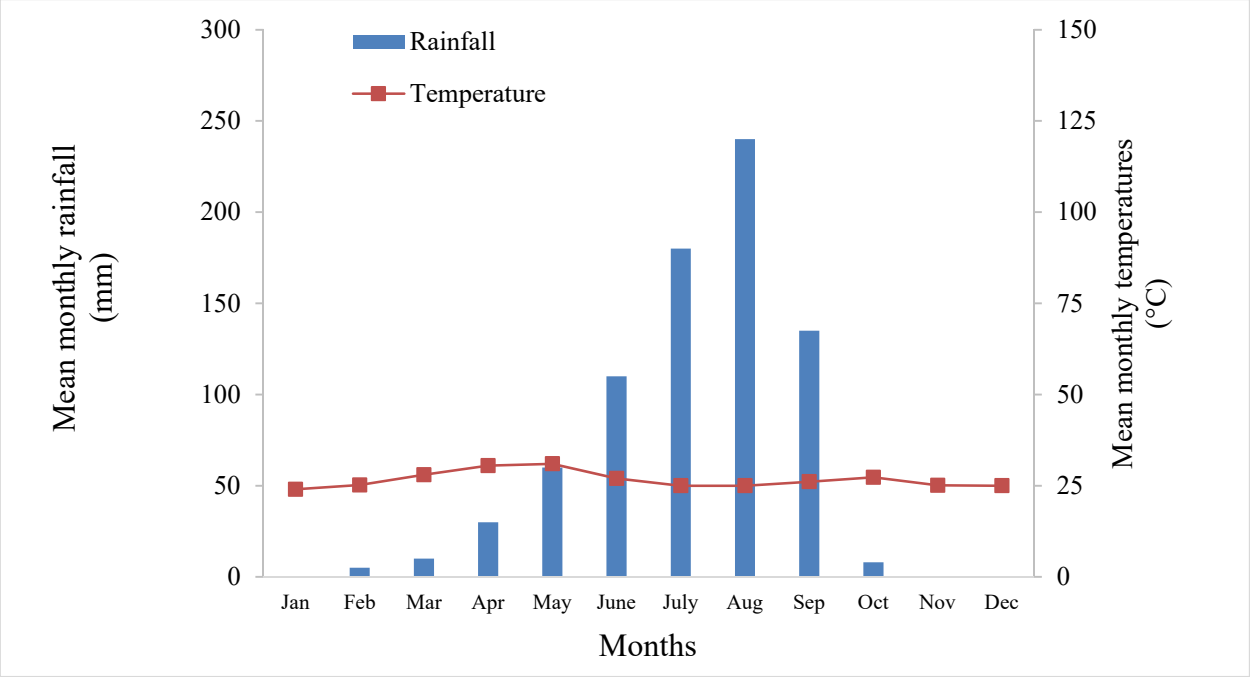


Figure 5: Diapaga ombrothermal diagram (ASECNA, 2014)

Sunstroke varies between 7-8 h/day on average, while air humidity is sometimes average, sometimes low (Kuela, 2000). Relative humidity is low in the cool season, with a minimum of 20.5% in February and a maximum of 81% in August according to Doussa (2006).

In Niger: The WAP/Niger Complex region is characterized by a Sahelo-Sudanian climate type in the north (Niamey, Torodi, Say) where rainfall is in the order of 450 to 600 mm (Figure 6).

This climate includes: (1) a wet season (May to September) with an optimum rainfall in July/August; (2) a dry season (October to April) with a cold variant from November to February (24°C for the average temperature of the coldest month: January) and another hot season from March to June accompanied by the harmattan (35°C for the average temperature of the hottest month: May).

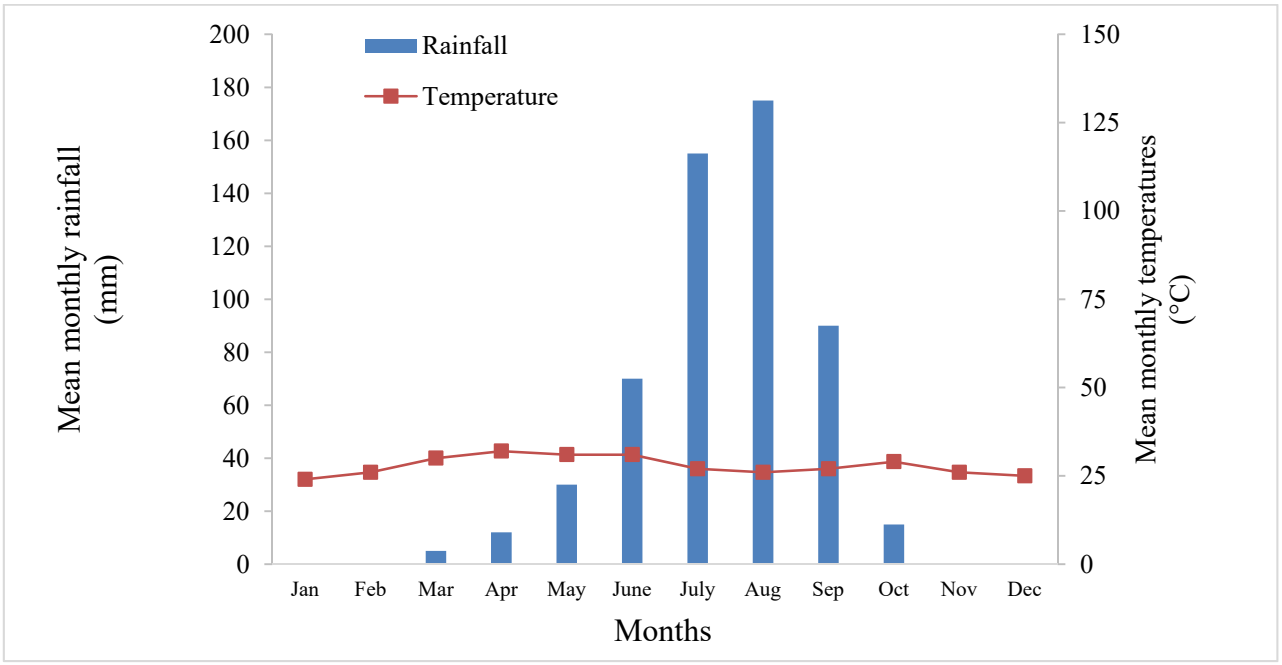


Figure 6: Umbrothermal diagram of Say region (Niger) Source: http://fr.climatedata.org/location/766865/

The temperature shows a maximum in April-May (with temperatures above 40°C) and a minimum between December and January (with 20°C). The prevailing winds are the north-south harmattan, from November to March, and the south-west and north-east monsoon, from April to October. The average speed is about 3.5 m/s. The annual sunshine is of the order of 2000 hours. January is the driest month, with 0 mm of precipitation. Record rainfall was recorded in August with an average value of 171 mm.

1.3.2. Hydrography

The hydrography of the W-Arly-Pendjari Complex straddles the watersheds of the Volta and Niger (Vitchoékè, 2009), with the main rivers being the Niger River, Pendjari, Mekrou, and Alibori (Houssou, 1998). These rivers represent the main water sources of the W-Arly-Pendjari Complex. They are also supplemented by temporary streams including Tapoa, Arly, Singou, etc. There are also many natural, permanent and/or temporary pools, to which are added artificial water points (UNDP, 2004).

The WTBR region is crossed by rivers, namely Niger and three of its tributaries which are the Tapoa to the north, the Mekrou (410 km) to the West and the Alibori (338 km) to the East. To these three important rivers are added other tributaries which are presented in the table below (figure 7) below.

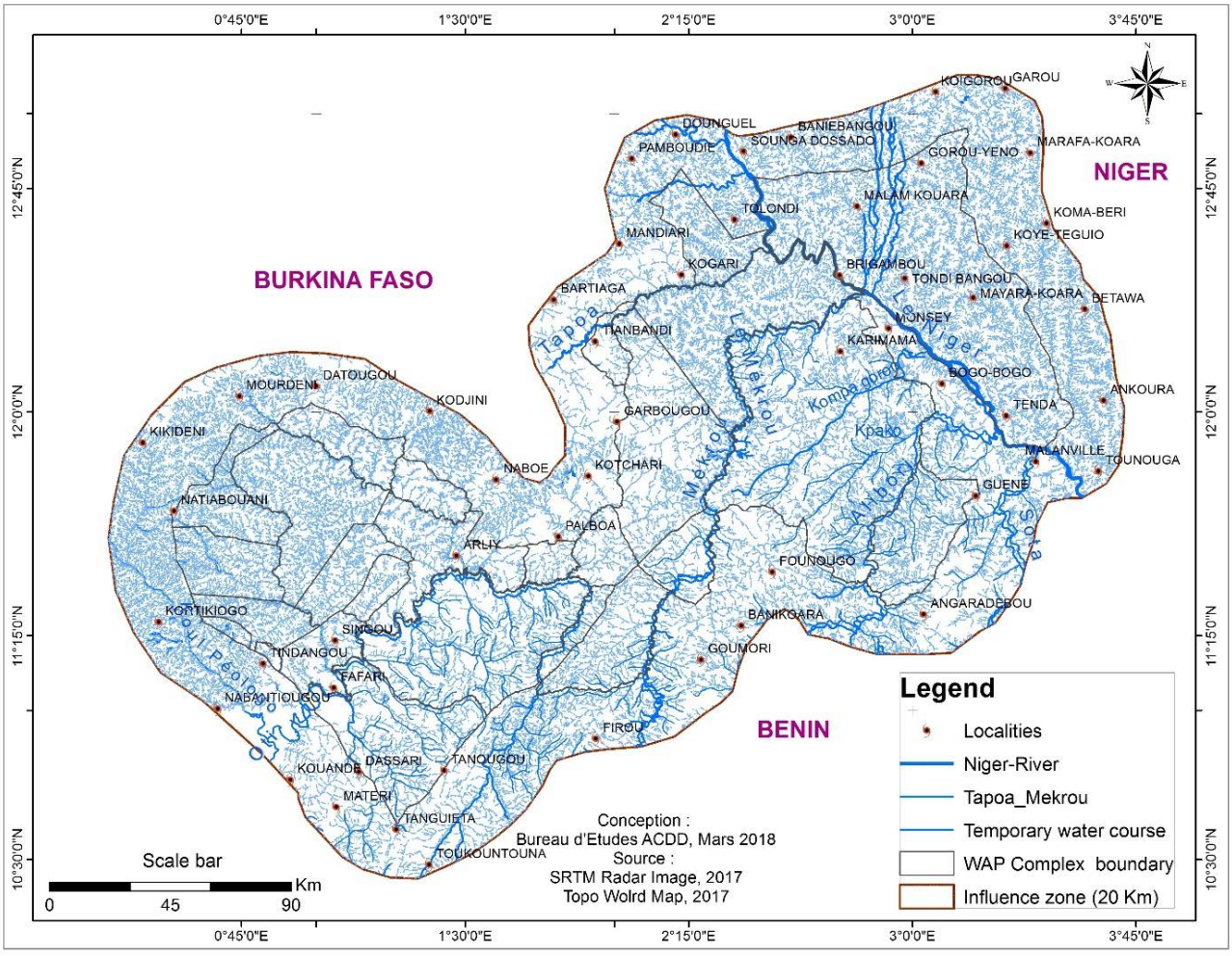


Figure 7: WAP Complex Hydrographic Network

The Alibori and Mekrou rivers, which drain the entire WTBR/Benin, are the main sources of water available intermittently in some areas during the dry season. To these two important rivers are added tributaries: The main ones are Kpako, Kompagarou, Bedarou, Djiga, and Konékoga, all of them are intermittent. We can also notice the absence of ponds. This situation of water shortage in the dry season in the WTBR/Benin for a long period cause induced displacements of wildlife which expose them to poaching pressure.

The WTBR/Burkina Faso is irrigated by two main watersheds: (i) the Niger River Basin in the North whose waters are drained by rivers and their tributaries: Diamangou, Tapoa, Goulbi, Mekrou and Tvénétiegal (ii) the Volta basin across the Pendjari river to the south which includes the Bokouongou, Doubodo, Kourtiagou and Arly rivers. There are permanent natural water points in years of good rainfall (water sources at the foot of the Atacora, the pool of Sourloumbou, lion's ponds, Gwarambou, contiguous Hippo ponds, etc.).) and water points equipped with boreholes with a solar or motorized drainage system (PK27's ponds, PK57, huts of elephants, ponds of Soanda, Tamalé, Bounga, etc.).

In the WTBR/Niger, five semi-permanent rivers (Sirba, Goroubi, Diamangou, Mékrou, Tapoa) irrigate it. To these watercourses are added 11 permanent ponds, 16 semi-permanent ponds, and 553 temporary ponds. Despite the availability of water in the Burkinabe and Nigerien parts of the WTBR, the water problem remains a permanent concern towards the end of the dry season (April-May) since most of the ponds dry up completely.

The situation in the Pendjari and Arly Biosphere Reserve arises to a lesser extent. The BTAP drainage system is based on the Volta River basin. The Pendjari and Arly rivers gave their names to the parks. The Pendjari River is permanent all year long and extends over a length of 380 km, 200 km in the Pendjari National Park and 122 km in the Arly National Park (OFINAP, 2015; CENAGREF, 2016). The Arly River flows only a certain time of the year and crosses the Arly Park for about eighteen (18) km in the North-South direction. This network is reinforced by the presence of numerous natural ponds, particularly along the Pendjari.

1.3.3. Geology, relief, and pedology

A. The geomorphology of the WTBR area is a vast collection of peneplains dotted with granitic inselbergs and hills. The relief is characterized on the one hand by the Cliffs of Gobnangou in Burkina Faso and on the other hand by the Atakora range along the southern boundary of Pendjari Park and further from the southwest of the park. The geology is largely dominated by Precambrian and Cambrian rocks of plutonic or volcanic origin, most of which have been strongly altered and reworked. However, specificities relating to each component are observed.

In Benin: The relief in the Benin portion of the WTBR includes the terminal extension of the Atacora range, which originates from the Akwapin Range in Ghana and extends to Benin. The chain ends in the Niger valley with some hills, from which one has a panoramic view of the river. On both sides of the plain lie flat regions: the plain of Borgou in the east and that of Gourma in the west.

The geological formations of the WTBR / Benin are arranged in long NNE-SSO directional bands which mainly group the series of Buem, Atacorien, and Dahomey. The types of soils encountered are: (1) brown clay soils with calcareous nodules; they are poorly evolved, hydromorphic soils, which are intergraded towards eutrophic brown soils; (2) tropical ferruginous soils (slightly leached in clay, indurated on kaolin or granito-gneiss, hydromorphic); (3) soils on alluvio-colluvial material which are hydromorphic, mineral or slightly humus soils with deep gley; (4) poorly evolved lithic soils on quartzites and micaschists; and finally (5) leached tropical ferruginous soils, concreted on Continental Terminal sandstone, indurated on kaolinic material derived from sandy-clay sediment.

In Burkina Faso: In the Burkinabe part of the WTBR, the relief is dominated by glacis, armored buttes, sandstone hills, the highest of which is the Gobnangou range (344m). The crystalline structure represented by sedimentary rocks is composed of granitic basement, voltaic sandstone, quartzite and iron armor (ORSTOM, 1969). The soils are little evolved. The main ones are: (1) soils with crude minerals (lithosols of various rocks and armour); (2) ferruginous tropical soils leached on sandy and sandy-clayey materials; (3) hydromorphic soils, browned on the volcanic meta that have undergone pedogenesis; (4) eutrophic brown soils on clayey materials; (5) soils with little erosion on gravel materials.

In Niger: At the level of the Nigerien part of the WTBR, the relief is in the form of a generally undulating extent, suggesting two characteristic subsets: a relatively flat area ranging in altitude from 220 to 250 m (Moyenga, 1995) and some facies dominated by glacis, breastplates, sandstone hills, and cliffs (Kuela, 2000) to the south.

In general, six soil units can be distinguished. These include (1) raw mineral soils; (2) undeveloped soils; (3) vertisols; (4) sesquioxide soils; (5) mull soils from tropical countries; and (6) hydromorphic soils. Geographically, these units are generally grouped into three major groups, namely sesquioxide soils, mainly of leached tropical ferruginous types that dominate the eastern and northern parts of the region. These soils have poor fertility and a rather pastoral vocation; poorly developed soils dominate the northwest, central and western parts of the region. In the south, there are sesquioxide soils, soils of crude minerals, and hydromorphic soils of average fertility suitable for cultivation.

B. The Arly National Park (ANP) is largely underlain by a granito-gneissic base, only disturbed by a few multiform intrusions, the Pendjari valley being sedimentary. Moreover, it is located in an old peneplain and therefore has few altitudinal variations that are between 150 and 225 meters. In its southern part, on the cliffs of Gobnangou, the altitude reaches 350 m.

The main soil types (OFINAP, 2015) are:

- poorly developed soils divided into classes such as lithosols, laterite eroded soils, alluvio-colloidal soils, poorly developed eroded soils, etc...;
- tropical ferruginous soils including lightly leached ferruginous soils, thin-to-thick tropical ferruginous soils, and impoverished leached-ferruginous soils.

C. The Pendjari Biosphere Reserve (PBR) is established on a flat relief peneplain whose altitude varies from 105 m to 200 m. This peneplain is based on three major geological substrates: i) schist in voltaic platelets which are originally impermeable clay soils, ii) Buem quartzite and jasper sandstone and iii) intrusive Dahomean granite. The plain is bordered to the south by the Atacora mountain range formed by quartzites and whose altitude varies from 400 m to 513 m. Its northern and eastern borders are occupied by the Pendjari River. A second chain, the Buem, smaller and parallel to the first, is located within the park itself. Overall, the soils of this peneplain are fine-structure-hydromorphic soils (CENAGREF, 2016).

1.4. Biological context

1.4.1. Vegetation

According to the White phytogeographic subdivision (1983), the WAP complex is located in the Sudanian sector which is the alternating pattern of open forest and Savannah formations. Its flora includes more than 800 plant species divided into 428 species and 103 families (Assédé et al., 2016).

The map below illustrate the different plant formations within the WAP complex.

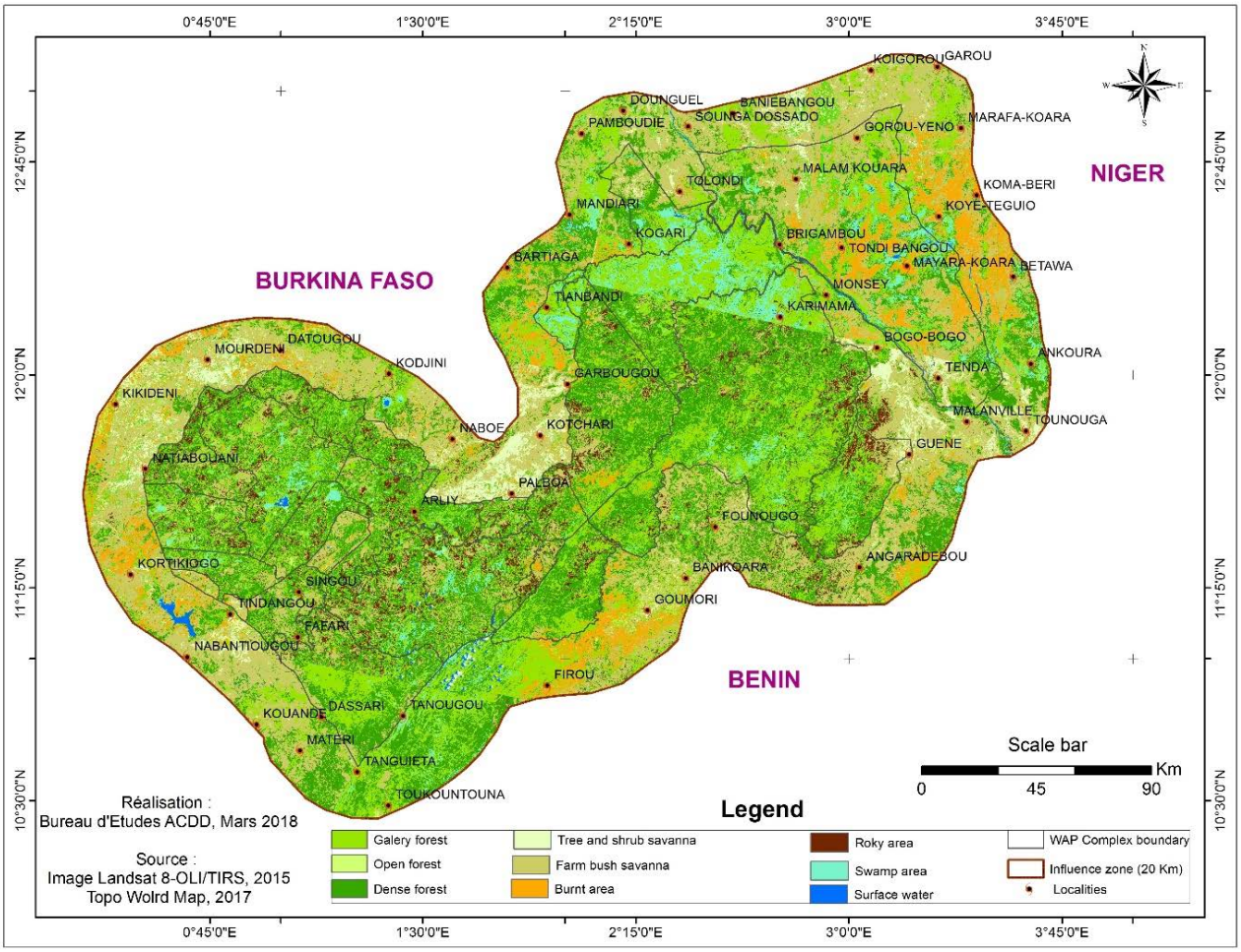


Figure 8: Vegetation map of the WAP Complex and its zone of influence (buffer 20km)

The vegetation in the W-Arly-Pendjari Complex is characteristic of the Sudanian zone with a mosaic of grassy, shrubby, wooded and wooded Savannahs, as well as open forests sheltering herbaceous stratum dominated by grasses (Oumorou, 1998).

The main vegetation types are:

- the wooded Savannah: it covers respectively 19%, 30% and 55% of the area of the W, Arly and Pendjari subsets, and represents an average of 28% of the whole W-Arly-Pendjari Complex;
- shrub Savannah: with an average coverage rate of 24% of the WAP Complex with, 17% in Pendjari, 34% in W and 64% in Arly;
- tree Savannah: it has an average coverage rate of 5% of the W-Arly-Pendjari Complex;
- the herbaceous or grassy Savannah;
- the spotted bush (4%);
- forests galleries;
- saxon Savannah and altitude vegetation (1%); and
- riparian vegetation.

The floristic procession of the W-Arly-Pendjari Complex, therefore, includes a large proportion of herbaceous but also of true woody plants, which, depending on their density, constitute shrub Savannahs or even wooded Savannahs (Oumorou, 2003). There is a gradient from north to south, ranging from herbaceous Savannahs at *Loudetia togoensis*, *Andropogon pseudapricus*, *Pennisetum pedicellatum*, to shrubby Savannahs at *Combretum spp*., *Terminalia spp*, *Acacia spp*., *Anogeissus leiocarpa*, *Balanites aegyptiaca, Ziziphus mauritiana*, and finally the wooded Savannahs with *Terminalia spp*., *Isoberlinia doka, Daniellia oliveri* and *Burkea africana*.

In addition, there are also more closed plant formations, made up of dry forests and forest galleries at the edge of rivers (Adomou et al., 2006).

Moreover, Sahelian affinities in the North allow species belonging to the neighboring Sahelian domain to penetrate the zone, while in the South, species specific to the humid flora of the Guinean domain ascend, thanks to more favorable ecological situations. The plant species that can be observed in the W-Arly-Pendjari Complex, therefore, belong mainly to these three domains and, depending on whether we consider the northernmost or southernmost parts of the complex, we will find processions more or less rich in elements from these two neighboring domains (Adomou, 2005).

Sokpon (2001) distinguishes the following plant formations:

- Swampy Savannah at *Terminalia macroptera*
- Wooded Savannah with *Daniellia oliveri* and *Pterocarpus erinaceus*
- Savannah tree with *Combretum spp*.
- Shrub soap with *Acacia gourmaensis* and *Crossopteryx febrifuga*
- Swampy Savannah at *Mitragyna inermis* and *Acacia sieberiana*
- Saxon Savannah with *Detarium microcarpum* and *Burkea africana*
- Forest gallery in *Khaya senegalensis*
- Forest gallery in *Cola laurifolia*
- Dry dense forest at *Anogeissus leiocarpa*,
- Forest riparian to *Parinari congensis* and *Pterocarpus Santalinoides*
- Open forest at *Anogeissus leiocarpa*

In addition, particular formations such as rôneraies and bowé complete the mosaic of the vegetation cover with an infinity of transitions allowing an impressive variability of the Savannah (Akoegninou et al., 2006).

The W-Arly-Pendjari Complex belongs to the Sudanian Savannah ecoregion, characterized by a low rate of endemism of plant species. Nevertheless, three endemic plant species (*Thunbergia atacorensis, Ipomoea beninensis, and Cissus kouandeensis*) find favorable conditions for their development (Akoegninou et al., 2006, Bouyer et al., 2007).

1.4.2. Fauna:

▪ Mammalian fauna:

The W-Arly-Pendjari Complex harbors an average of 259,300 individuals of large mammals, an average density of 19 individuals per km², with a reasonable coefficient of variation of 7% (Table 1)

There are 10 different species of antelopes which are the Buffon's cob (Kobus kob), the cob Defassa (*Kobus ellipsiprymnus defassa*), the Grimm's duiker (*Sylvicapra Grimmia*), the cob Redunca (*Redunca redunca*), the bushbuck (*Tragelaphus scriptus*), Red-footed duiker (*Cephalophus rufilatus*), Orebia (*Ourebia ourebi*), hippotrague (*Hippotragus equinus*), hartebeest (*Alcelaphus bucelaphus*), and damalisque (*Damaliscus korrigum*) (Bouché et al., 2012).

Three of the "big five" can easily be observed, namely the lion (*Panthera leo*), the elephant (*Loxodonta africana*) and the buffalo (*Syncerus caffer brachyceros*). This strongly enhances the reputation of the W-Arly-Pendjari Complex as one of the most important conservation sites in Africa, and in the world in general (Bastel, 2012). The fourth of the "big five", is the leopard (*Panthera pardus*) although still difficult to be observed. An increase of the space distribution for the leopard is also being recorded, where first traces observation (Henschel, 2014), and trap camera images are taken in the W Benin and Pendjari National Park.

There are also endangered or threatened species in much of Africa such as the cheetah (*Acynonix jubatus*), wild dog (*Lycaon pictus*), the damalisque (*Damaliscus korrigum*) and the manatee (*Trichechus senegalensis*) (Bouché et al., 2003)

In addition to large mammals appreciated for tourism, the W-Arly-Pendjari Complex is also rich in small mammal species. The presence of jackal (*Canis aureus*), serval (*Felix serval*), ratel (*Mellivora* capensis), civet (*Viverra civetta*), common genet, mongoose ichneumon, swamp mongoose (*Atilax paludinosus*)), white-tailed mongoose (*Ichneumia albicauda*), red mongoose (*Herpestes sanguineus*), African wildcat (*Felis sylvestris*), rock hyrax (*Procavia capensis*), spotted necked otter (*Lutra maculicollis*)), the white-headed otter (*Aonyx capensis*), the jackal (*Canis adustus*), the dwarf jackal (*Lepus europaeus*), thirteen species of rodents including the grasscutter (*Tryonomys swinderianus*), the porcupine (*Hystrix cristata*) and finally nine species of bats (Rouamba et al., 2002, Sinsin et al., 2008, Bouché et al., 2012).

The fauna is distributed throughout the W-Arly-Pendjari Complex, but the highest densities have been recorded mainly along the rivers. If 55% of the density is for elephant, buffalo, and large antelopes, small size antelopes contribute 20% of the average density. On the other hand, the elephant accounts for 32% of the biomass / km² compared with 46% for the Buffaloes and 18% for the large antelopes (PAPE, total faunal count of the W-Arly-Pendjari Complex, 2013).

Table 1: Average mammal densities (N/km2) and biomass per km2
(Source: W-Arly-Pendjari Complex total wildlife count, 2014)

Species	Estimation	Density	Density	Weight (kg)	Biomass	Biomass
	Average	Total	%	Average*	kg/km²	Average %
Buffalo	4.73	64346	25%	359.0	1699.2	45.7%
Hippotragus	2.05	30570	11%	217.0	444.0	12.0%
Bubalus	0.61	8294	3%	142.0	86.6	2.3%
Waterbuck	0.15	2011	1%	132.0	19.5	0.5%
Damaliscus			0%		0.0	0.0%
Buffon's Cobe	2.30	31227	12%	48.0	110.3	3.0%
Redunca	1.38	18706	7%	23.5	32.3	0.9%
Guib Harnaché	0.55	7453	3%	33.3	18.3	0.5%
Warthog	1.30	17693	7%	45.0	58.6	1.6%
Red-fronted Gazelle			0%		0.0	0.0%
Ourébi	1.46	19906	8%	12.4	18.2	0.5%
Grimm's Cephalophus	1.02	13875	5%	13.1	13.4	0.4%
Rufous-sided Cephalophe			0%		0.0	0.0%
Total ungulate	**15.55**	**214081**	**82%**		**2500.4**	**67.3%**
Elephant	0.58	7945	3%	2,000.0	1168.9	31.5%
Total ungulates + elephant	**16.13**	**222026**			**3669.2**	**98.8%**
Baboon	1.17	15903	6%	25	29.3	0.8%
Patas	1.41	19154	7%	10	14.1	0.4%
Total monkey	**2.58**	**35057**	**14%**		**43.4**	**1.2%**
Striped-sided Jackal	0.16	2207	1%	15	2.4	0.1%
Total carnivorous	**0.16**	**2207**			**2.4**	**0.1%**
Global total	**18.87**	**259290**	**100%**		**3715.0**	**100.0%**

- **Avian fauna**

The W-Arly-Pendjari complex has 460 bird species (Grell et al. 2002) including 101 aquatic species, 120 forest species, 162 species living in open country and 3 species living in rocks and mountains. 163 species are migratory, 63 of which are Palearctic. The diversity of raptors is particularly great with 37 species identified (Bousquet, 1992).

The W-Arly-Pendjari Complex is an important area for bird conservation (Adjakpa, 2004). It is home to 21 of the 32 waterbird species in the Sudano-Guinean Savannah biome. The main species recorded are Poicephalus senegalus, *Coracias cyanogaster, Merops bulocki, Lybius dubius, Corvinella corvina, Ptilosto musafer, Anthoscopus parvulus, Hirundo leucosoma* (BirdLife International, 2008).

However, no endemic species have yet been **enumerated**, but threatened species are listed. They are the vulture (*Trigonoceps occipitalis*), the Great Horned Owl (*Bubo africanus*), the Roller (*Coracias garrulus*), the Snake (*Sagittarius serpentarius*) and the Hobereau (*Falco cuvieri*) (Grell et al. 2002). The most frequent water birds are the kingfisher (*Cerylerudis*), the eagle (*Concuma vocifer*), the crowned crane (*Balearica pavonina*), the grey heron (*Ardea cinerea*), the egret (*Egretta alba*), the armed duck (*Plectropterus gambensis*), the widowed dendrocygne (*Dendrocygna viduata*) (Adjakpa, 2003 b). 37 species of birds of prey have been identified, including the eagle vocifer (*Haliaeetusvocifer*), the African gyps (*Gyps africanus*), the Rüppel gyps (*Gypsrueppellii*), Brown Percnoptera (*Neophron percnopterus*), Crested Vulture (*Aegypius occipitalis*), Martial Eagle (*Polemaetus bellicosus*), Snake Messenger (*Sagittarius serpentarius*), Bateleur (*Terathopiuse caudatus*).

- **Ichthyological fauna**

Fishery resources have been studied by several authors (Moritz et al. 2008; Ahouansou Montcho, 2009). Approximately 100 fish species have been recorded in WAP streams.

The W-Arly-Pendjari Complex straddles the Volta Basin and the Niger River Basin (ECOPAS, 2005). The Volta basin is characterized by the endemism of nine fish species (*Steatocranus irvinei, Synodontis arnoulti, Synodontis macrophthalmus, Synodontis velifer, Brycinus luteus, Micralestes pabrensis, Barbus bawkuensis, Barbus guildi, Barbus parablabes*) (Ahouansou, 2010). Seven of them are found in the Pendjari River. With this wealth, the W-Arly-Pendjari Complex hosts 77% of the endemic fish species recorded in the Volta basin (Leveque et al. 2004, Ahouansou Montcho, 2009).

- **Reptiles**

The W-Arly-Pendjari Complex is hosting six rare snake species, some of which are clearly forested. These are *Bitis arietans, Charina reinhardtii, Naja melanoleuca, Naja nigricollis, Python regius and Python sebae* (Mensah, 2009).

The Nile crocodile, the most interesting reptile for tourism, is one of the fauna of the W- Arly-Pendjari Complex. Tree agamas and turtles are widespread.

There are 80 species (Cury & al., 2008). There are also the sand snake (*Psammophis*), the common agame (*Agama agama*), the bush lizard (*Nucrus*), the scinque (*Mabuya megalura*), the soft turtle (*Cyclanorbis*), the Nile crocodile (*Crocodilus niloticus suchus*) and the Nile varan (*Varanus niloticus*) (Mensah, 2009).

- **Entomofauna**

The entomofauna of the W-Arly-Pendjari Complex has an important specific and biological richness (Tchibozo, 2009). For grasshoppers, butterflies, and dragonflies, Grell's first studies in 2002 and 2004 found considerable diversity.

They are of great interest to specialists and scientists. Rhopalocerans, which represent the vast majority of diurnal Lepidoptera, are increasingly used as bio-indicators in ecological or biogeographic studies concerning the protection of natural environments (Bobo et al., 2006; Boggs et al., 2003). Indeed, their large size, their visibility in the environment, the simplicity of their identification and the fairly advanced knowledge of their biology make Rhopalocera useful bio-indicators taxa (Tchibozo et al., 2008). Following the various exploration missions in the W-Arly-Pendjari Complex, 38 species have been captured, 37 of which are well identified and confirmed by the world specialist Torben Larsen (Tchibozo, 2009).

- **Bats**

In the W-Arly-Pendjari Complex, 50 bat species have been recorded. They are divided into 8 families and 21 genera. Compared to the work of (Green, 1983) and Haquart and Rombaut (1995), there is a 6.4% increase in species richness increasing the number of species from 47 to 50. Fruit bats are divided into 8 genera, and insectivores are divided into 14 genera (Djossa, 2007). The species *Hypsignathus monstrosus*, *Lissonycteris angolensis* and *Rousettus aegyptiacus* have been recorded in the Complex whereas the species *Eidolon helvum* has only been recorded in village areas. Among insect-eating bats, *Coleura afra*, *Taphozous mauritianus* and *Rhinolophus darlingi* have been recorded in village areas, while *Glauconycteris variegata* and *Myotis bocagii* have only been recorded in the W-Arly-Pendjari Complex (Djossa, 2007).

1.5. Socio-economic characteristics

1.5.1. Populations and demography

The WAP complex also reflects the interaction between natural resources and human beings, maintained since the Neolithic, which has contributed to producing plant formations and landscapes representative for the biodiversity evolution in the Sudano-Sahelian biome.

The W-Arly-Pendjari Complex is not inhabited. In the peripheral areas and at less than 40 km from the Complex, there are about 350 towns and villages for a population totalizing about one million inhabitants. The populations are divided into a dozen ethnic groups of which the four most important are the Gourmantché, the Djerma, the Dendi and the Fulani. These groups are common to all peripheral areas of the WAP complex, which can facilitate transboundary cooperation. The plurality of ethnic groups on the outskirts of the complex offers a notable cultural and archaeological diversity, which can open perspectives for the development of eco-cultural tourism. These riverside populations are largely dependent on natural resources, particularly the complex, from which they derive nearly 80% of their livelihoods.

Population characteristics around the WAP complex are presented by components.

- In WTBR/Benin: population in the riverside towns (Kandi, Karimama, Malanville, Banikoara, Kérou) is 759 300 inhabitants based on estimates from fourth RGPH (General Census of Population and Housing (INSAE, 2013).
- In WTBR/Burkina Faso: population in the riverside towns (Botou, Diapaga, Logobou, Thansarga) in 2012, according to the National Institute of Statistics and Demography (INSD-BF), was 109,980 inhabitants.
- In WTBR/Niger: population according to the 2012 General Population and Housing Census (RGPH) estimates, was 204,590 inhabitants.

- In the Arly-Pendjari Transboundary Block (APTB), particularly the Pendjari Biosphere Reserve (PBR), population estimates and projections within four riverside towns of Toucountouna, kouandé, Matéri and Tanguiéta, was 336,737 inhabitants bases on results of the fourth General Population and Housing Census (INSAE, 2013). In Arly National Park (ANP), the projected population in 2012 presented by the National Institute of Statistics and Demography (INSD), within five riverside towns (Madjoari, Patiaga, Namounou, Pama, Tambarga) has been estimated at 97,834 inhabitants (ACDD, 2018).

1.5.2. Development and management infrastructure of the WAP complex

The W-Arly-Pendjari Complex has two thousand two hundred (2,200) kilometres of trails, twenty-five (25) water points, and twelve (12) watchtowers to facilitate safe wildlife observation; nineteen (19) boreholes to supply water points; ten (10) life bases for managers and 11 advanced control posts for surveillance officers and patrols.

For hotel facilities, the W-Arly-Pendjari Complex has two mid-standard hotels, two lodges (Koudou Falls and Pendjari Lodge) and a research complex (laboratory, rooms, meeting room, restaurant) at the triple point, and finally an Ecological Interpretation Center in the Pendjari National Park.

The tourist visits are organized by different actors. At the entrance of each park, reception services are set up to organize visits according to available tourist offers. Guiding services and security guards are offered to visitors at their request.

In order to facilitate visitor traffic in the W-Arly-Pendjari Complex, the trails are named and a detailed signaling system is installed along the routes.

Radio communication is the most important channel in terms of communication strategy and security of the anti-poaching teams. Currently, the WAP complex radio communication system has failed, affecting the effectiveness and coordination of surveillance teams dispersed in the field. Added to this is the inadequacy of the drinking water supply structure at the existing monitoring stations. With regard to the mobility of patrols, the mobile means have decreased over time, especially vehicles for patrol.

These infrastructures differ in number, type, and country of WAP complex. In WTBR, tracks built over the last six years strongly need restoration and reopening. Even more worrying, is the serious lack of water points in the Benin part of the WTBR.

1.5.3. Socio-community infrastructures of the localities bordering the WAP complex

Nineteen (19) communes are bordering the WAP complex when considering the three countries. On the territories of these communes, are located various infrastructures such as zone or community hospitals, health centres, dispensaries and maternities, schools and colleges, local administration, markets, large diameter wells, and boreholes. Access to drinking water seems still to be an enormous challenge for the population. Just less than 10% of households in these localities have access to fossil electricity and renewable energy is scarce in these localities whereas it can be a potentiality to be valued. In the education sector, there is a significant effort because almost all villages and city districts have a primary school, and lower and upper secondary schools are present in many districts. However, these infrastructures are deprived of electricity. It should be noted that social and community infrastructures do not always meet the needs of the population.

1.5.4. Economic Activities

The socio-economic context of the WAP complex region has practically similar characteristics from one country to another, but with a predominance of issues related to the management of natural resources (land, pastures, water, etc.).

According to ASA (2015), Sawadogo (1996), RGA (2008) Zouri (2013) and Mounkaila et al. (2013), agriculture and livestock are the main economic activities of the riparian populations of the protected areas of the WAP complex. Farmers in Benin localities represent around 65% as heads of household while 20% are in livestock. Most producers (farmers and pastoralists) associate farming with livestock. The Peulh breeders do the same and associate agriculture with livestock farming.

In Burkina Faso, in the southern part of the WTBR, the agricultural potential is significant due to the fact that climatic conditions and soils are favorable for agriculture and livestock. In Niger, agriculture is practiced by the entire population. Livestock is an activity of almost the entire population of Peulh. Other economic activities are forestry, fishing, handicrafts, trading, beekeeping, tourism, and gathering. They provide livelihoods for local people.

However, because of their extensive traits, agriculture and livestock generate significant negative impacts on the natural resources of the WAP complex. The expansion of agricultural land and grazing areas has always been to the detriment of forest ecosystems. The population growth and the high flows of transhumant pastoralists are the factors explaining the continued pressure on the natural resources of the WAP complex. This situation destabilizes the ecological balance, leads to the degradation of ecosystems and the insecurity of wildlife. The extensive nature of agricultural activities needs to be reviewed with a view to reducing pressure while improving the living conditions of the local population.

1.5.5. Current situation of women, youth, and vulnerable groups in the peripheral villages of the WAP Complex

In the project area, the social roles and responsibilities of men, women, and youth are determined by tradition and religious beliefs that are used to explain and legitimize inequalities and disparities between these social categories. The socio-cultural and religious inequalities noted mainly concern among others: (ii) inequalities and disparities in the sexual division of labor that give more work to women than men, and to girls than boys, with damaging impacts on their health, productivity, leisure time and reinvestment in human capital; (iii) inequalities of access, or the continuation of processes of social exclusion or self-exclusion and particularly of women and young people (girls and boys) from decision-making spheres.

In Burkina Faso

Production systems are dominated and dictated by a predominant patriarchal system where women and youth are simply considered as productive assets or simply unpaid labor that do not participate in decision-making.

In the villages bordering the Arly National Park (ANP), the women hold a second-place position. In general, a woman must respect and obey her husband and his entire family. The land is the patrimony of the family and is controlled by the clan chief who is the leader of the lineage Women's access to land in greedy society is codified by customary laws. Women have access to land through their husbands and are said to provide more than 75% of subsistence production with low access to productive assets, human capital and financial and extension services. 96% of households headed by women and practicing market gardening use traditional equipment, hoes, daba, etc., while 21.5% of households headed by men practicing the same speculation use plows. The issue of accessing to credit, with the required conditionalities, is especially to the disadvantage of women and young people (boys and girls) by the fact that they still have difficulty to providing guarantees for the credit. Women represent more than 50.8% of the population in the project area and manage about 11.5% of households. They diversify their economic activities (agriculture, breeding, weaving, non-timber forest products, etc.), and also join solidarity and mutual aid networks (tontines, cooperatives). In the past, women's participation in meetings was limited, but with awareness-raising and training activities, they are increasingly invited to meetings at the village level next to men.

They are increasingly taking the floor at these meetings and no longer hesitate to give their point of view on community development issues and their interests.

In Benin

Practices and customary law are based on cultural determinants that grant gender-differentiated status and roles. Despite the progressive weakening of these norms, this traditional differentiation of social and economic roles undermines the prospects for gender equality and women's economic empowerment in light of the many inequalities that still exist in gender relations. The Mo Ibrahim 2011 Gender Index for Benin is below the African average and ranks 28th out of 53 countries. The differentiating factors of the poverty level between men and women are multiple and variable and are strongly linked to the inequality of access to resources and basic social services: education (literacy, education/training), access to production factors including land, access to financial and health services, and access to employment.

In rural areas, unemployment and underemployment of youth are leading to an intensification of migration flows to the cities and an increasingly "early" rural exodus to the capital and inland cities. The phenomenon is increasing year by year, a clear sign of a chronic lack of productive employment in rural areas. Rural youth (15-24 years) and young adults (25-35 years) without land are the most affected by the phenomenon. For these young people, their labor force is their only factor of production. They are uneducated or poorly educated. They work on family farms that they do not own with no bright prospects given the modest income they earn from their work. Hence, all these factors are aggravating the phenomenon of rural exodus in Benin.

Although poverty generally affects women more than men, the incidence of poverty is lower among poor female-headed households (27.6 versus 38.32% for poor male-headed households). This apparent advantage could be explained, among other reasons, by the fact that women heads of household are generally characterized by their economic autonomy, which is partly the result of their marital status, the size and composition of the household, the nature of their economic activities and their access to finance.

While poverty declines sharply with education, women remain less educated than men. Many of them fail to achieve high levels of education. 52.2% of women have no level of education compared to 33.6% of men (INSAE 2012).

The statistics, differentiated by gender published in the National Gender Promotion Policy in Benin, show that of all the plots acquired by secure means (inheritance, customary allocation, and purchase) only 13% belong to women. Moreover, the average size of women's plots is generally smaller than that of men: (0.90 ha for women versus 1.26 ha for men). Women have much more access to land through purchase, inheritance, covenant, and donation.

In Niger

In general, women are present in all sectors of economic activity in both rural and urban areas. Their participation, however, is handicapped by the sexual division of labor which confines them to certain types of activities and by the limited time-budget available for them to invest effectively in profitable and well-paid production activities.

Whether it is rainfed agriculture or irrigated agriculture, access to land through succession is the dominant mode and is generally reserved for men. But access to land ownership is possible for both men and women through acquisition for consideration. Access to finance in the sector is also unequal because of the eligibility criteria (yields, productivity, contribution) that accompany it and which women can hardly meet. In general, the credits allocated to women are small amounts from informal networks and are most often invested in areas other than production. On the other hand, men often benefit from more substantial loans for the acquisition of production equipment and for marketing.

Livestock farming is placed second contributing-activity to the Niger economy and, as agriculture, it concerns the populations in all living environments and in all lifestyles (sedentary and nomadic). Men and women participate in all these forms of breeding but in different ways.

In terms of livestock ownership, both women and men have access to livestock: (51%) for men and (37%) for women heads of household. Women often own more sheep (51.2%)[3] than men (31.7%).

The fishing industry records the participation of men and women. Men dominate the production process (fisheries capture) while women are involved in fish processing and marketing. Men own the most efficient means of production (canoe, net, etc.). When the activity is family, women are used as labor. Even if the problem of access in the sector, between men and women, does not arise, the problem of control of production and revenues from the marketing of products is manifested for women.

This situation is explained by the family management of the sector, the weak organization in the process of transformation and commercialization or the inadequacy of the professionalization of the men and women who practice the activity.

Trade is an activity practiced by both men and women. However, gender-disaggregated statistics on the formal sector are not available.

According to data from the Niger Chamber of Commerce, Agriculture, Industry, and Handicrafts in 2007 only 3579 companies were registered in the consular file. From that file, 184 are run by women or 5.14%. They are distributed as follows: Industry and construction (19) Trade and services (150) Craft industry (15).

The sector's sources of funding come from own funds, credits, and subsidies. In general, men are involved in larger activities requiring a significant financial support, while women are involved in smaller activities requiring very little financial investment (small trade, exploitation of natural resources). A few women reach the status of great traders. Those women multiply their activities and manage to gain some financial autonomy and ownership of the means of production (land, livestock).

The handicraft sector employs about 23% of the population. The proportion of women artisans represents more than 52%. The distribution of handicrafts is guided by traditional culture: Men work as blacksmiths, shoemakers, weavers or braid ropes in the dry season, while women are engaged in braiding mats, basketry, weaving, pottery, leather goods, processing, etc. While male craftsmen very often obey cast logic, female craftsmen are found in all the communities.

1.6. Threats and obstacles

The components of the WAP complex are increasingly affected by climate change. Natural resources and ecosystems are threatened by the negative effects of climate change in addition to various factors including the anthropogenic pressure due to the continuous increase of the population in the riparian zones of the complex. The anthropogenic factors include uncontrolled land clearing, agricultural and rangeland expansion, poaching, fires, mining exploration, population growth, increasing climate migration, unsustainable harvesting of non-timber forest products, soil and water pollution and especially climate variability, including the increased in the frequency and periodicity of climatic hazards and natural disasters.

[3] Survey QUIBB 2005

In addition to these threats, there are other structural obstacles related to inconsistencies (a weak synergy of actions between the supervisory administrations, different modes of management and status of the areas, non-harmonized legislation between the countries) and variable and fluctuating financial support. Hence the urgent need for a regional and cross-border approach at the level of the three states. Below is a more detailed description of the different sources of pressure.

1.6.1. Non-rational agricultural practices

In the areas bordering the WAP complex, the main activity carried out by the population is agriculture. However, inappropriate agricultural practices are at some extent source of pollution by runoff (especially from cotton fields), erosion and land degradation. Agrochemical runoff has a direct impact on biodiversity. Erosion directly affects biodiversity by silting up rivers and ponds. It has a strong impact on the retention capacity of these water points causing a water deficit during the dry season. The early drying of ponds forces wild animals to congregate around the few remaining water points, thus facilitating poaching.

Erosion and land degradation related to agriculture have other less direct effects on WAP biodiversity. By causing a drop in agricultural productivity, these phenomena are responsible for the deficit of land pushing populations to seek out and clear new land more fertile for cultivation. The land deficit is also due to high levels of natural population growth (2-3%) and regular flows of immigrants who are allowed by local communities to exploit peripheral areas. All these factors lead to a lower availability of arable land per capita.

The land deficit in peripheral areas has caused agricultural encroachment of the WAP Complex. According to Houessou L. et al (2015), in the Benin part of the WTBR, mosaics of fields and fallow have increased by 29.77% over the first ten (10) kilometers inside the PA at the expense of primary natural formations. This situation is the result of a political choice by the Beninese government after 2006 directed towards the intensification of cotton cultivation with certain incentive measures (agricultural credit, repayment of debts to cotton producers, increased price per kilo of cotton). Most of the peripheral area is affected by land degradation and deforestation. Poor itinerant management practices and lack of effective land planning degrade soils and ecosystems. This situation has a major impact on livelihoods by causing a scarcity of suitable land for agriculture, pushing people to seek new fallow lands.

1.6.2. Uncontrolled Transhumance

The basic feed for the cattle herd comes mainly from the exploitation of the natural rangelands and remains dependent on rainfall, except for the natural bourgoutières and some rare perimeters arranged for fodder production. The increase in livestock gradually leads to constraints on access to fodder and therefore increased competition between livestock farmers on one hand and farmers and livestock breeders on the other hand. To ensure the feeding of their cattle, the breeders practice transhumance. Two types of transhumance can be distinguished: the small rainy season transhumance corresponding to the growing season and the large transhumance centered on the dry season. The availability of water and fodder within the Reserve is attractive for transhumant pastoralists in the dry season.

The great transhumance concerns the national pastoralists, but the vast majority of them come from Niger and Nigeria as shown on the map below (figure 9):

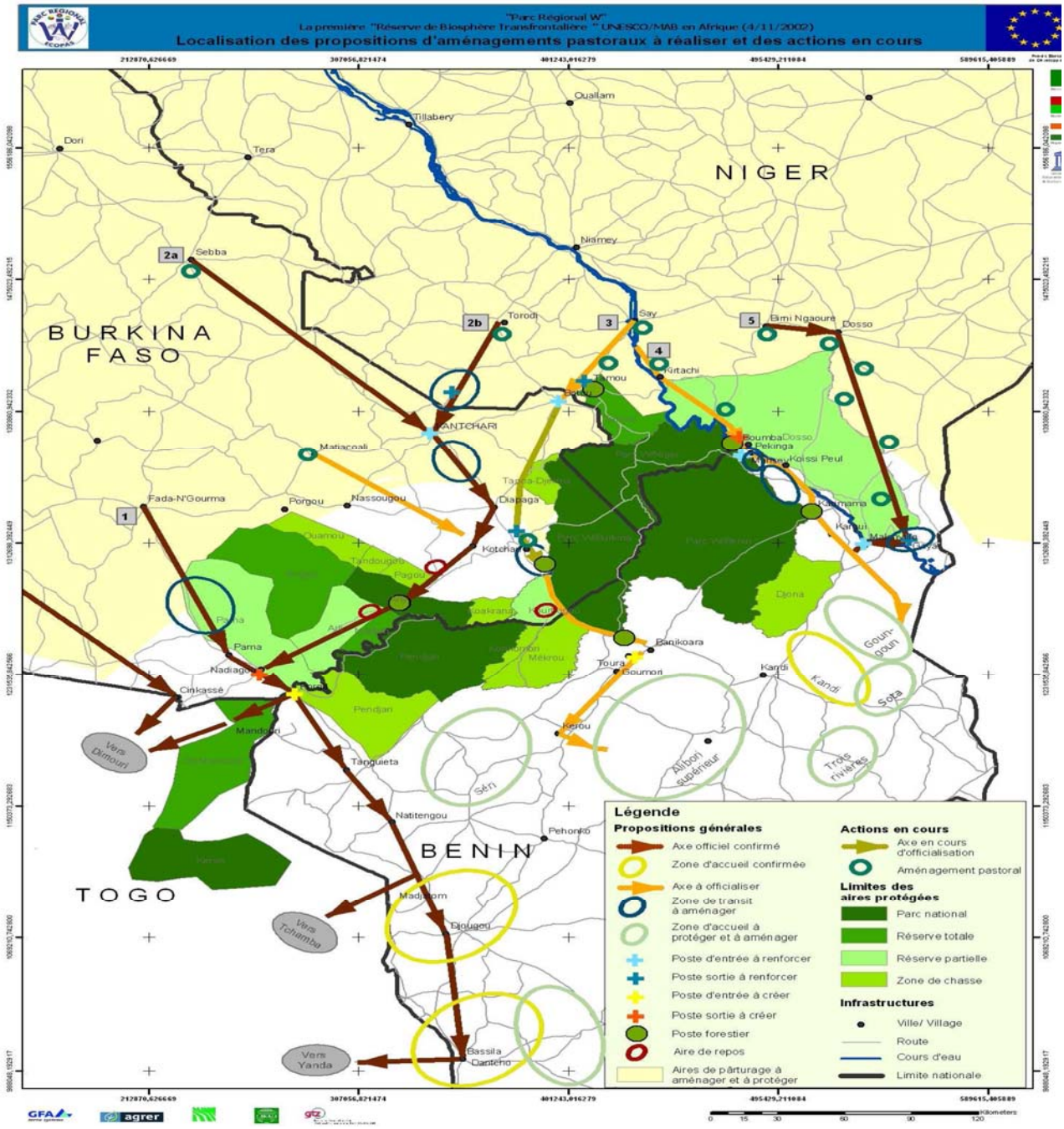


Figure 9: Transhumance corridors in the WAP complex area

An aerial survey conducted out in 2003 on the entire WAPO complex (W, Arly, Pendjari, Oti-Mondouri) estimated the cattle herd at about 65,000 head. The presence of livestock in the WAP complex is a source of threats for ecosystems and species due to disturbance of fauna and flora, competition from wildlife and livestock for food resources, risks of transmission of epizootic diseases to wildlife, risks of poisoning large carnivores' breeders, poaching, etc. To compensate for "uncontrolled transhumance", the option was made to provide alternative routes for transhumance, checkpoints, grazing areas and water points as well as destination sites for transhumant livestock.

1.6.3. Poaching

Poaching is one of the main causes of wildlife pressure and ecosystem degradation. It is stimulated by several factors such as easy access to firearms, a high demand for bushmeat, the low living standard of the local population, the lack of tools, legal and regulatory provisions for repression and weak coordination between states (it is necessary to raise the important element of border crossings in poaching). Tripartite agreements on combating poaching were adopted, such as the one between Burkina Faso and Benin in 1984 and the one between the three countries in 1987.

1.6.4. Uncontrolled Bushfires

Bushfires represent another serious obstacle to biotope and species management. These fires stem from the lack of awareness of the issues among the inhabitants of the peripheral areas and the threat posed by global warming. Different types of wildfires have been reported in the area:

- Agricultural compensation fires: this type of fire is related to traditional cutting and burning. Farmers perceive the combustion of the necessary biomass. However, this unsustainable practice reduces soil fertility in the long run. The compensation fires occurred during the dry season until the beginning of the rainy season (May), many of these fires are uncontrolled and intensified by climate drought.
- Hunting or honey collection fires: villagers light a fire in order to hunt small game (in particular rodents and snakes). During the dry season, fires are lit during the day and become out of control at night. They destroy the vegetation and got spread the following days, fed by the dry wind. For honey harvesting, the traditional practice is to burn the surrounding vegetation, to empty bees and collect honey safely.
- Grazing fires (fires to renew pastures): local transhumant and local breeders ignite dry vegetation just before their passage. This practice stimulates the natural regeneration of fresh grass. These pastoral fires generally remain uncontrolled and sometimes causes conflict with local farmers.
- Protective fires: These are generally early fires that are practiced since the beginning of the dry season. They are used to burn biomass that can become combustible for accidental fires.
- Accidental fires: This occurs where fires are used to illuminate driving or road maintenance. Accidental fires are uncontrolled and are often associated with poaching.

Savannah ecosystems have always adapted to fires. Unfortunately, this resilience is being challenged as fires are increasingly linked to weather conditions caused by climate change.

1.6.5. Siltation and pollution of Surface water

The periphery of the WAP complex is a space of concentration of human activities: agriculture, livestock, fishing, etc. Crop productions are based on traditional techniques with low productivity and low livestock integration. Its practices through inappropriate techniques and approaches contribute to a strong degradation of resources. This degradation is reflected, on the one hand, in a decline in soil fertility caused by land leaching, deforestation, water and wind erosion, and, on the other hand, a deterioration in water quality due to the increasing and uncontrolled use of chemical products and chemical fertilizers. Poor natural resource exploitation practices are the main causes of desertification and progressive siltation of streams, rivers, and major rivers such as the Niger River.

1.6.6. Environmental migration

Due to its strong agricultural and pastoral potential, the peripheral zone of the WAP complex seasonally welcomes agricultural migrants from neighboring towns and provinces of bordering countries.

1.6.7. Non-timber forest products exploitation

Overgrazing, unsustainable hunting, unsustainable harvesting of wood and non-wood products in and around protected areas threaten the integrity of their ecosystems. These practices are justified by people's short-term needs for food, resources, and income. These communities lack secure access, user rights and the capacity to manage land and resources in a sustainable manner. Many products have the potential to be harvested sustainably but communities lack basic resource knowledge and the capacity to establish, manage and monitor sustainable harvesting regimes.

The need for income and the lack of sustainable alternative income generating opportunities favor illegal and destructive activities such as charcoal production and honey harvesting, collection and processing of fruits from certain trees.

Wild honey is harvested clandestinely in the parks by men from outlying villages. The exploitation technique using flaming flares to ignite the hives or by falling trees is unsustainable and dangerous for the environment.

Many endemic species in the WAP area are currently endangered or vulnerable due to uncontrolled use of resources for food, pharmaceutical, pastoral and artisanal production.

It is therefore important to consolidate this sector in order to be able to protect vulnerable species and take advantage of existing resources that can create employment in the complex and enhance the value of the products (honey, shea butter, etc.).

As far as women are concerned, they are found in the collection in the peripheral areas of the reserve of fruits of néré and shea, medicinal plants, and firewood. The major problems they face are linked to low collection yields, traditional processing practices and difficulties in accessing the market (marketing).

Suggestions for improvement include training/collecting NTFPs and transforming/enhancing them, facilitating access to processing equipment and then supporting the marketing of production.

1.6.8. Deforestation

Due to its forest potential, the WAP Complex and its area of influence are almost permanently subject to wood harvesting and charcoal production activities. Tree felling in these three countries is normally regulated at the national level. The progressive degradation and loss of natural habitats, due to over cutting valuable timber, leads inevitably to the decline in the quality and habitat disturbance, as well to number and distribution of wildlife within the WAP complex. Forest services are considered unable to effectively control so far or at least to organize it in a sustainable manner in the peripheral WAP area despite some success in other regions.

1.6.9. Illegal fishing

Climate change, particularly the rise in temperature and the noticeable decrease in rainfall, has contributed to the reduction of water bodies (ponds, rivers, etc.) at the level of the complex and the riparian zones. Added to this is the proliferation of fishermen and illegal logging around these watercourses leading to the disruption of aquatic ecosystems. Fish and other aquatic animals are at serious risk of extinction in many streams within the WAP Complex.

Fishing is one of the prohibited activities inside the WAP complex. However, the workshop held in Ouagadougou in October 2013 identified the main threats to fishing. Filling due to soil erosion, the use of chemicals leading to non-selective fishing and high mortality rates and, in terms of water and water resources the reduction of rainfall.

1.6.10. Pastoral pressure

In the Sahelian countries, in particular, transhumant livestock farming is an imperative in the quest for a balance between pasture productivity and herd needs. The obstacles to the development of livestock farming and transhumance, in particular, are the lack of control over livestock numbers, the heavy dependence on climatic conditions and the lack of water. In the Sahel, the overall decline in rainfall and its poor monthly distribution over several years have led to sharp declines in pasture productivity and water scarcity. To cope with drought and the deterioration of pastures, the result is the practice of transboundary transhumance, the persistence and scale of migration constitute a source of degradation and destruction of flora, economic and social conflicts.

Illegal transhumance in WAP has been adopted as an alternative solution by the majority of the breeders. It is highlighted by the increasing numbers of cattle that move from different transhumance axes that connect the periphery to the core of the Park. Thus, out of 1933 cattle available to the 33 breeders, 1765 or 91.3% go on transhumance.

In reality, the total Tamou wildlife reserve includes two transhumance routes that continue in Burkina Faso, passing through Kaleyenou and Zoumboukoli respectively. The neighboring municipality of Torodi, in Niger, has four major transhumance routes that all lead to Burkina Faso following four gateways (Chellol Ballol, N'gnaro, Kerta, and Tampéna Bakano). The left bank of the Niger River (Dosso partial wildlife reserve) has eight transhumance trails distributed in the communal territories of Kirtachi and Falmey, which all lead to the Park on the Benin side (SOULEY K., 2004).

To remedy this situation, official corridors for the passage of transhumant herds have been defined through various bilateral or sub-regional agreements. Unfortunately, most of these transhumance corridors are not equipped with pastoral infrastructures.

1.7. Vulnerability analysis of populations and ecosystems to the effects of climate change at the project area level

Rainfall and temperature data used to analyze climate variability are collected from four main stations near the WAP complex: Benin (Kandi and Natitingou), Burkina Faso (Diapaga) and Niger (Say and Dosso).

From the analysis of these data, two sub-periods can be distinguished. These are the 1970 to 1993 sub-period and the 1994 to 2017 sub-period. The sub-period 1970-1993 is characterized by a decreasing trend in rainfall amounts. As for the sub-period 1994-2017, it is characterized by an excess trend in rainfall amounts where we can notice twelve (12) years of deficit and twelve (12) years of surplus.

The analysis also reveals that in terms of minimum temperature, two sub-periods can be distinguished (1970-1989 and 1990-2017). On the first sub-period, the trend is clearly characterized by low minimum temperatures. In total 100% of the years in this sub-period are cold while in the second subperiod 81% of the years are warm.

In the Pendjari Park region over the 1950-2015 period, two sub-periods can be identified: the 1950-1980 and 1981-2015 sub-periods. The first sub-period (1950-1980) was generally characterized by an excess trend in rainfall amounts. As for the 1981-2015 sub-period, it was characterized by an interannual variability in rainfall amounts where twenty (20) years are in deficit and fifteen (15) years in excess.

The minimum temperature anomalies include two subperiods (1960-1998 and 1999-2015). On the first sub-period, the trend is clearly characterized by low minimum temperatures. On this subperiod, a total of 84.6% of the years are cold compared to 70.5% of warm years in the second sub-period.

The analysis of the data thus shows the current trend of global warming in the WAP complex ***(cf. Annex 1.)***

1.8. Assessment of the vulnerability of populations and natural ecosystems in the project area to the effects of climate change

1.8.1. Future climate

Projections of climate parameters to 2032 and 2050 horizon for the WAP Complex region reveal an increase of around +2°C to +2.5°C respectively for annual temperatures and a decrease of around -9% for annual precipitation. The alternation of seasons which determines the active growing season does not exceed four months in the WAP Complex area.

The analysis of figure 10 shows that there will be pluviometric pejorations starting from 2030, 2050, 2070 and 2080 in most of the WAP complex. The water deficits are more pronounced in the north-eastern part, i.e. at the level of the W park than in the south-western part of the complex where Pendjari and Arly parks are located compared to the parameter values over the reference period, and this is true for all the scenario.

Similarly, projected temperature deviations (Figure 11) indicate positive temperature changes of 0.6 to 5.08°C under CPR scenario 4.5 and 1.5 to 6.08°C under CPR scenario 8.5.

These results confirm a downward trend in precipitation and an increase in temperature despite their high spatial variability.

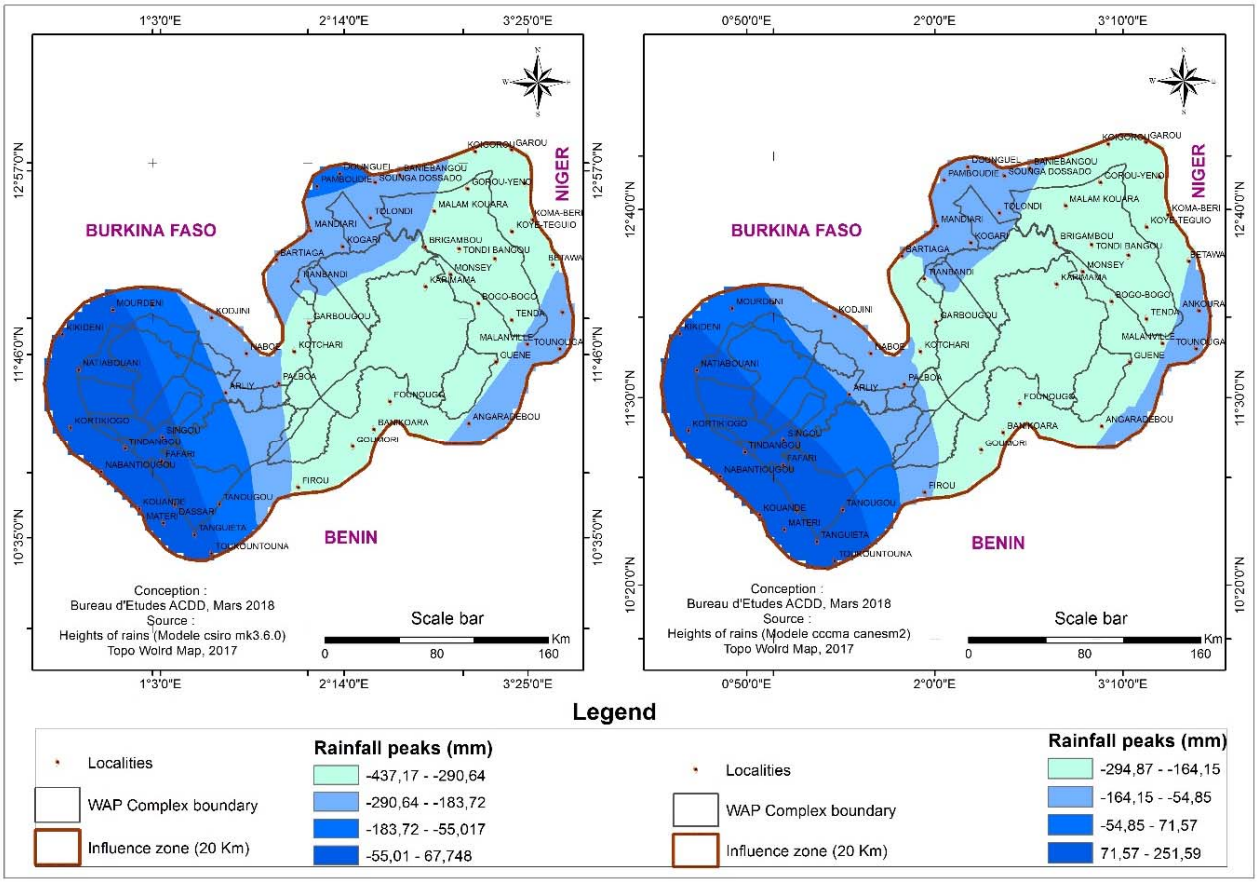


Figure 10: Rainfall peaks according to RCP 4.5 and RCP 8.5 scenarios

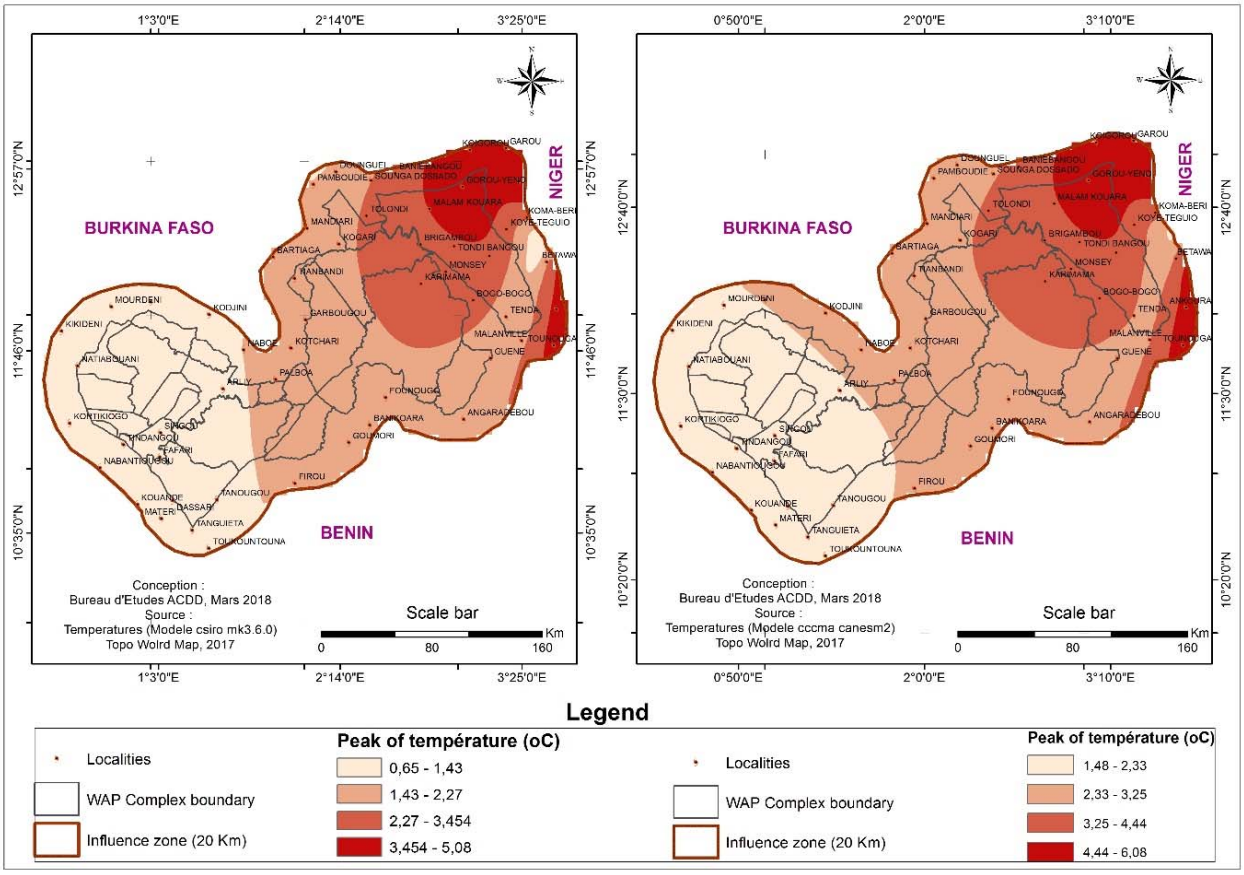


Figure 11: Thermometric peaks according to RCP 4.5 and RCP 8.5 scenarios.

1.8.2. Socio-economic vulnerability of the WAP complex

1.8.2.1. Demographic trends in the WAP Complex area

In view of their environmental and socio-economic specificities, the ecosystems, including the biodiversity of the WAP complex, are highly coveted by local populations, regardless of their socio-professional affiliation. In 2012, the population of the WAP Complex totalized about 1,454,753 inhabitants. This population is projected to reach 3,055,746 in 2030 (ACDD, 2018).

1.8.2.2. Major environmental issues in the WAP Complex region

The natural resources on the periphery and more often inside the WAP Complex are permanently coveted and sought by migrants in the area. Most of the population are involved either in agriculture or in transhumance.

Agriculture is heavily dependent on rainfall and the environment. Forest soils are currently under great pressure from farmers. This rain-fed agriculture is based essentially on cereal crops with a trend towards cash crops, particularly cotton. Agricultural practices are essentially based on family-type production structures and traditional techniques with low productivity. Current agricultural practices, dominated by slash-and-burn agriculture, low integration of livestock farming and abnormal use of pesticides and chemical fertilizers, are sources of pollution by runoff (especially from cotton fields), erosion and land degradation with a direct impact on biodiversity, especially indigenous aquatic flora and fauna.

This problematic process first reduces the extent and duration of fallows, which dangerously affects the ecological balance of forest ecosystems. In addition, the phenomenon of the increased human population and the fact that they still using rudimentary agricultural practices finally puts strong pressure on Protected Areas.

The presence of livestock in the complex is a source of threats to ecosystems and wildlife species due to disturbance of wildlife, competition from wildlife and livestock for food resources, risks of transmission of epizootics to wildlife, risks of poisoning of large carnivores by ranchers, poaching, etc. Disparities in policies and strategies between the three countries, inadequate monitoring capacity, lack of livestock reception and passage areas, which are poor in vegetation outside protected areas, as well as lack of adequate pastoral infrastructure along official transhumance routes are among the factors that attract transhumant pastoralists to protected areas.

Apart from agriculture, livestock and bushfires, the fraudulent and illegal exploitation of wood resources such as logging for timber and charcoal production have serious impact on the forest resources and threatens the balance of the ecosystems of the WAP Complex.

Natural formations, such as gallery forests and dense forests, are declining significantly in favor of open forests. Similarly, wooded and shrubby Savannahs have given way to grassy Savannahs, burnt surfaces, and rocky outcrops.

In conclusion, the compatibility between production methods and the environment, in particular, the conservation of the biodiversity of the WAP ecosystem, becomes a major issue in a variable and uncertain climate context to which solutions must be found.

1.8.3. Observed and potential impacts of climate change on the ecosystems and livelihoods of the WAP Complex riparian communities

The adverse effects of climate change are being felt both on the natural ecosystems and on the livelihoods of communities along the WAP complex.

1.8.3.1. Observed impacts of climate change on riparian communities of the WAP complex

As a result of exchanges with representatives of the WAP Complex riparian communities during national workshops (Benin, Niger and Burkina Faso), the major phenomena that increase their vulnerability to climate change are floods and drought.

Flood vulnerability affects all sectors where the intrinsic characteristics of the environment are likely to favor flooding. Figure 12 shows four areas where vulnerability to flooding varies from low to very high.

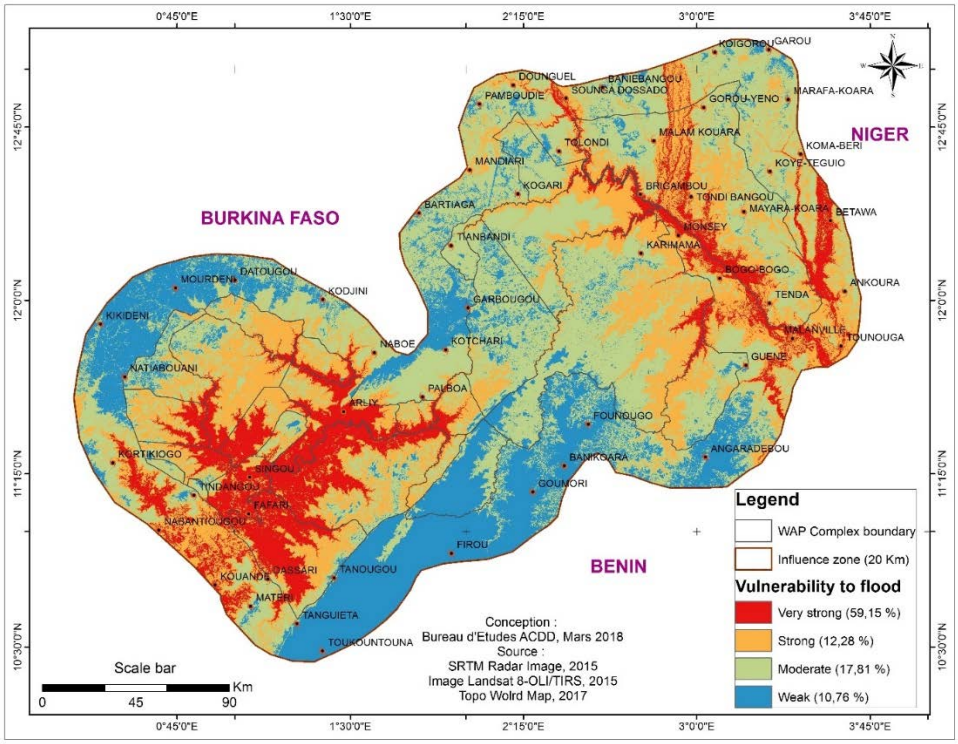


Figure 12: Flood vulnerability map of the WAP complex area

With regard to drought, figure 13 shows that the area of the WAP complex and the strip of land within the 20km radius are mainly vulnerable to drought. Areas with high and very high vulnerability to drought occupy respectively 6.52% and 50.42% of the territory studied. On the other hand, areas with low vulnerability to drought (32.2%) are scattered mainly in the WAP complex. Areas moderately vulnerable to drought (10.86%) are scattered throughout the study area.

In total, the adverse effects of drought hazards on livestock production concern:

- the degradation of pastures and corridors;
- the accentuation of transhumance and conflicts between farmers and breeders;
- the worsening livestock water stress;
- the decrease in milk and meat production;
- social change.

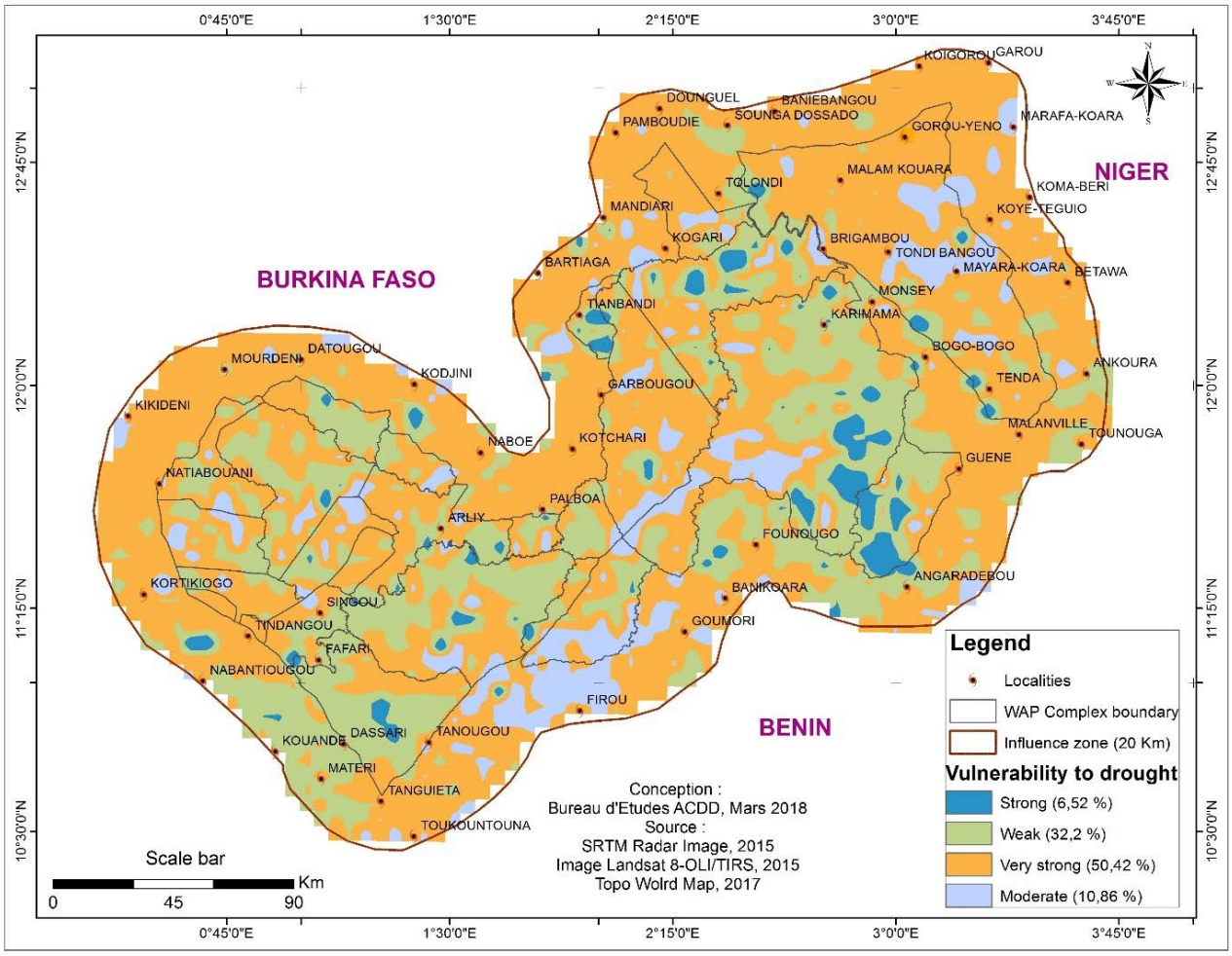


Figure 13: Drought vulnerability map of the WAP complex area

1.8.3.2. Potential impacts of climate change on the WAP complex ecosystems

At the WAP Complex level, a sustained drought will affect all the vegetation cover in a similar way, only riparian vegetation will be relatively spared. The increase in climatic pejorations will lead to changes in floristic composition of the various types of the vegetation. A sustained drought will result in a regressive evolution of the vegetation, with confinement of the original formations in the most favorable biotopes. Then it will be pointed out the scarcity of species better adapted to very favorable climatic conditions and the appearance of species with better resistance to drought. Species such as *Pterocarpus erinaceus*, *Vitellaria paradoxa*, *Sclerocarya birrea*, *Prosopis africana* will tend to disappear in favor of *Combretum glutinosum*, *Guiera senegalensis,* and *Boscia senegalensis*. This situation will affect other elements of biodiversity that have a close relationship with tree species.

In general, the impact of climate change could result in the migration of some species of fauna and flora and the emergence of others. The high vulnerability of pastures stems from the fact that the lengthening of the dry period and the narrowing of the vegetative period lead to the non-closure of the growing cycle of these annual grasses. This results in a decline in the quality and quantity of available biomass. The pastures of *Andropogon gayanus* represent the dominant component of the occupation units of the WAP Complex, especially in its Beninese and Burkinabe region. In the Nigerien part, the rangelands are dominated by Therophytes (arundinaceae). These pastures provide most of the food for ungulates (wild herbivores and domestic livestock). The result is a profound change in the reproductive biology of animal populations.

Due to climatic hazards, water points in the WAP Complex are and will potentially be affected by prolonged droughts and reduced rainfall, which most certainly threatens wildlife survival. Moreover, since migration is often linked to food availability, projected extreme climate events (drought, flooding) can also lead to changes in animal migration periods. In addition, since all elements in an ecosystem interact with each other, increasing the vulnerability to climate change of a single element could impact the entire system (fauna-flora-human). As a result, there is a need to quantify the level of vulnerability to climate change of each ecosystem component in order to plan and implement adaptation actions.

1.8.3.3. Potential impacts of climate change on the livelihoods of communities along the WAP Complex

Rural communities in general, and those living around the WAP Complex rely primarily on natural resources for their livelihoods. The traditional industries of agriculture, livestock, hunting, and fishing are closely linked to the availability of certain categories of natural resources (natural capital). Future climate trends show an increase in temperature and a decrease in rainfall amounts both under scenario RPC8.5 and RPC4.5. Climate change could induce sudden changes in the composition and vitality of the vegetation cover, an increase in the mortality of perennial vegetation, woody, and herbaceous perennials, a drop-in groundwater levels, the appearance of new epizootic diseases that are major constraints to the development of animal production.

Ultimately, climate variability will affect agriculture, livestock, fisheries, water, forestry, and soils. This constitutes a risk for the populations of the WAP Complex that require the identification and implementation of urgent adaptation measures for the benefit of riparian communities.

1.8.4. Capacity or accessibility of socio-professional groups to basic resources

The vulnerability of the different socio-professional groups bordering the complex result from their differential accessibility to various livelihood assets.

It appears that for the targeted social-professional groups, vulnerability is essentially related to:

Farmers	Insufficiency of physical capital (equipment and means of production) Insufficient human capital Natural capital deficiency
Breeders	- Insufficient physical capital (equipment and means of production) - Natural capital (pastures, water points, etc.)
Fishers	- Insufficient physical capital (equipment and means of production) - Insufficient financial capital - Insufficient human capital
Hunters	- Insufficient physical capital (equipment and means of production) - Insufficient human capital - Insufficient financial capital

The different socio-professional groups of the WAP Complex are vulnerable to the identified climate risks. However, the vulnerability factors are not the same. This vulnerability can be seen in the group's inability to meet basic living needs. Nowadays, the adverse effects of climate variability are felt on food security, which is a concern for most of the communities bordering the WAP Complex.

The major constraints of rainfed agriculture are the degradation of productive potential, the impoverishment of agricultural land, the high vulnerability to climatic hazards (droughts, floods), the rudimentary means of cultivation, the insufficient farm materials and equipment, the demographic and land pressure, the low input use (fertilizers and improved seeds), the pest pressure and the low level of technical supervision of producers.

In other words, in addition to the recorded anthropogenic pressures, WAP is also subject to climate variability (aridification and desertification), the likely effects are the loss of ecological values, habitat fragmentation, and wildlife decline. As a result, the traditional socio-ecological balance of the WAP Complex is threatened. It must be noted that at the current state, there is a huge knowledge gap and a notorious lack of spatialized data but also some evolutionary dynamics on the impact of climate variability/change on biodiversity and the functioning of the ecosystem.

1.9. Institutional framework for protected area management

1.9.1. Regional Institutional Context

During the implementation of the PAPE, an inter-State institutional arrangement was put in place and structured around the consultative bodies of the WAP complex. These joint management bodies of the WAP complex are:

- The Council of Ministers (CM),
- The Technical Monitoring Committee (TMC),
- The Protected Area Consultation Framework
- The Scientific Council (SC)
- The Permanent Secretariat (SP).

1.9.1.1. The Council of Ministers (CM)

The Council of Ministers is composed of the ministers in charge of protected areas in the signatory States. It meets once a year in ordinary session and whenever necessary in extraordinary session. It is the decision-making, management and control body and takes its decisions by a simple majority of votes. The Presidency of the Council of Ministers shall be held alternately for a period of one (1) year by each of the signatory States, in alphabetical order.

The Council of Ministers has the following powers:

- direct the strategic vision of the WAP complex;
- evaluate and approve the actions, management tools and budgets adopted by the TMC;
- approve the rules of procedure of the TMC and the organization chart of the Permanent Secretariat; and;
- ensure overall responsibility for the implementation of the agreement at national and regional level.

1.9.1.2. The Technical Monitoring Committee (TMC)

The Technical Monitoring Committee (TMC) is composed of the General Directors of the institutions in charge of protected areas of the ministries in charge of protected areas, representatives of the WAP complex's decentralized administrations, representatives of local communities, grassroots community organizations, private operators, technical and financial partners, projects and other stakeholders involved in the management and financing of the WAP Complex.

The TMC oversees the implementation of the Council of Ministers' guidelines and has the following responsibilities:

- analyze and approve the annual planning of the Permanent Secretariat (SP), the master development plan and the management and development plans proposed by the Permanent Secretariat;

- analyze and approve the financing plans of the WAP complex and the operating budget of the secretariat proposed by the Permanent Secretariat;
- monitor the proper application of the master development plan and the development and management plan;
- determine the scientific guidelines for the protection of biodiversity and in economic, social, archaeological and any other relevant matters in collaboration with the Scientific Committee.

The Technical monitoring committee is organized around special meetings and plenary sessions. It takes its decisions in sessions, on the basis of the activity report and the proposed decisions prepared by the Permanent Secretariat and on the basis of the opinions of the Scientific Council.

1.9.1.3. The Ecological Block Management Body

It is responsible for the development of the Protected Area at local, national and international level by carrying out activities in partnership with all the local structures involved. This management body shall also be responsible for achieving the objectives set out in this Agreement in accordance with the principles set out in Article 2. The development, monitoring, and revision of management tools and revision of the Management and Development Plan in relation to all stakeholders.

The Protected Area consultation framework is an initiative between the Protected Area Management and the stakeholders involved in the implementation of conservation and enhancement actions in the Reserve. It constitutes the formal framework for coordinating the development of municipalities and communities directly affected by the presence of the Protected Area. It is also in charge of the strategic direction and overall good governance of the reserve.

1.9.1.4. Scientific Council (SC)

The Scientific Council (SC) is composed of nine (9) scientists involved in the scientific life of the WAP complex and from the States Parties, representatives of national, regional and international research institutions. The Scientific Council is in charge of providing programming assistance, as well as monitoring and evaluation of the research activities within the WAP complex. The sessions of the Council of Ministers are preceded by the meetings of the SC to give opinions on any dossier submitted for its assessment.

In this capacity, its tasks are:

- promote research and training activities within the WAP complex;
- advise the Technical Monitoring Committee and the technical and scientific management bodies of the WAP complex;
- ensure the preparation of the Technical Monitoring Committee and the Council of Ministers;
- participate in the dissemination of knowledge resulting from research carried out WAP complex;
- issue opinions on research initiatives and projects in the WAP complex;
- plan and evaluate research activities in the WAP complex.

The sessions of the Council of Ministers are preceded by meetings of the SC to give opinions on any dossier submitted for its assessment.

The SC is also the key contact for structures, institutions, and organizations likely to form scientific partnerships with the WAP complex.

1.9.1.5. The Permanent Secretariat (SP)

The Permanent Secretariat (SP) of the WAP complex is the administrative body of the WAP complex, in charge of preparing the sessions of the Council of Ministers and implementing the decisions of the Council of Ministers, the Technical Monitoring Committee, and the Scientific Council.

The monitoring and implementation of the guidelines of the master plan and the joint cooperation and harmonization activities of the States Parties.

The Permanent Secretariat is the governing body of the WAP Agreement. It is responsible for:

- preparing the sessions of the Council of Ministers;
- implementing the decisions of the Council of Ministers, the Technical Monitoring Committee, and the Scientific Council;
- ensuring the monitoring and implementation of the guidelines of the master development plan;
- monitoring the implementation of cooperation, harmonization and joint actions of States Parties;
- ensuring the preparation of the meetings of the Technical Monitoring Committee and the Scientific Committee and making available the draft documents and related tools;
- monitoring the day-to-day implementation of the agreement and, if necessary, alerting States Parties to aspects of implementation that are of relevance to them;
- ensuring the day-to-day implementation by the stakeholders involved in the master development plan and the development and management plans for the WAP complex;
- ensuring the management of its human, financial and material resources;
- contributing to the mobilization of adequate financial resources for the management of the WAP complex;
- ensuring concerted planning and management between the different protected areas of the WAP complex;
- ensuring the functionality of the agreement bodies responsible for the supervision, control, and guidance of the WAP Complex.

The Permanent Secretariat is composed by professionals from the States Parties, under the general coordination of a Secretary-General. It is funded by contributions in kind and in cash from States Parties.

The Permanent Secretariat's organization chart is decided by the decision of the CM.

1.9.2. National Institutional Context

At the institutional level, Wildlife Reserves are placed under the supervision of Ministries in charge of the Environment in all three countries. However, each country has a supervisory administration with a different structure and functioning.

In Benin, the management body of the WTBR is the Direction of the W National Park (DPNW) which is under the supervision of the National Center for the Management of Wildlife Reserves (CENAGREF). CENAGREF is a state office of scientific, cultural and social nature, under the supervision of the Ministry of the Living Environment and Sustainable Development. To accomplish its mission, CENAGREF is administered by a Board of Directors (BoD) invested with the widest powers to act in all circumstances. Its actions are carried out within the limits of the mission assigned to the Centre.

In Burkina Faso, protected areas are under the authority of the Ministry of the Environment. The technical departments with competence in the management of Protected Areas are the General Directorate of Water and Forests (DGEF) and the National Office of Protected Areas (OFINAP), an autonomous public institution.

According to actions plans of the WAP complex, the Burkinabe part of the WTBR is placed under the supervision of the DGEF, while the Arly National Park is under the authority of OFINAP.

In Niger, the Ministry of the Environment and Sustainable Development, and more particularly the General Secretariat, is the public authority responsible for the management of protected areas, through the General Directorate of Water and Forests. The W Niger Park Directorate reports administratively to the Protected Areas Division, itself under the supervision of the Directorate, Wildlife, Hunting and Parks and Reserves (DF/CPR).

1.9.3. The context of the regional and transboundary approach:

The approaches and management methods of the different areas of the WAP complex have evolved since their creation by the French colonial administration.

After 1960, this centralized management is replaced by the national sectoral management. In each country, policy, legislation, regulation, and management of protected areas have been defined and applied without concertation or at least in a purely national perspective. On July 12, 1984, an anti-poaching agreement was signed between Benin and Burkina Faso, to which Niger will adhere in 1986.

In 1987, aware of the existing gaps in regional cooperation, Benin, Burkina Faso and Niger, supported by several partners, agreed on the development and implementation of a common regional conservation strategy through several regional projects and programs (Ledant and al., 2010)

The upsurge in elephant poaching and pressure from the agricultural front (Clerici 2007, Bouché 2015), the strong presence of domestic livestock in protected areas (Bouché et al., 2004, 2015) are revealing of the need for concerted conservation efforts across the WAP complex. In addition, there are some structural obstacles, so the problem of incoherences in related the management method, protected area status and non-harmonized legislation (Granier, 2013, PAPE, 2014b) between countries.

Since 2011, the European Union (EU) has been supporting the transboundary management of the complex through the Programme d'Appui aux Parcs de l'Entente (PAPE), which covers the National Parks of the WAP Complex and their peripheral areas pertaining to Benin, Burkina Faso Faso, and Niger. This program is financed by the 10th FED (Ledant et al., 2010).

2. Project Objectives

The ADAPT-WAP aims to strengthen the resilience of ecosystems and improve populations' livelihoods within the WAP Complex in relation with the climate change issue through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures.

This project will also consolidate the synergy between the three beneficiary countries by strengthening the sustainable and participatory management of the Complex and natural resources and by contributing to the resolution of CC induced conflicts between different users.

The project specific objectives are:

- Improve Strategic reference documents, i.e. development and management plans, by integrating the climate change issues.
- Increase the resilience of populations through an Early Warning System and providing relevant and timely information on the occurrence of extreme weather events in the WAP Complex and its adjacent areas.
- Improve the resilience of ecosystems (fauna and flora) and populations' livelihoods through the development of infrastructure, (transhumance corridors, drinking troughs, and anti-flood structures…),
- Ensure the sustainability of adaptation measures through mobilization and sensitization of beneficiaries and partners to master the tools developed and to execute the planned activities.

3. Project components and financing

To achieve the objectives of ADAPT-WAP Project, and on the basis of ecosystems and populations vulnerability analysis and the related threats burdensome identified, the intervention has been organized into four components.

Each component will adopt an integrated and participatory approach encompassing institutional, social, economic and environmental aspects in order to ensure the improvement of the livelihoods of the riparian populations to the complex WAP and the increase of natural ecosystems resilience, currently located under the threat of climate change and natural disasters.

Component 1 will deal with the integration of climate change aspects and of the Emergency Plan (MREWS) in the management tools of the WAP complex. This result will provide the institutional and legal required to implement the interventions of the project aimed at achieving different studies, concordant, leading to the development/updating of Master Development plan and to the action plan for the adaptation measures implementation.

Component 2 will establish the structure of a functioning, reliable and efficient early warning system at the WAP complex. The implementation of such an early warning system will help to minimize the negative impacts of natural disasters and with the development and implementation of a detailed contingency or emergency response plan. This plan will be made available to the various users and stakeholders in the WAP complex management.

Component 3 will undertake adaptation measures and actions aimed at maintaining the ecological equilibrium of the WAP complex and improving the resilience capacity of the local population. The main themes on which activities will focus are natural resources and ecosystems (water, soil, forest and pastoral ecosystems) as well as common social practices such as transhumance, overgrazing, illegal logging... Indeed, the measures will focus on improving infrastructures for farmers, fishermen, and pastoralists through silvopastoral and aquaculture management, the promotion of renewable energies, the establishment of a revolving fund.

Component 4 will be dedicated to information, communication and stakeholder's capacity building on key aspects of the project: climate change and EWS. To this end, it will be designed and implemented the information/awareness tools through well-identified information channels. This component is also focused on the design and implementation of capacity building tools for actors and visibility of Project actions. This component will have a transversal aspect that will embrace the major issues and problems and will concern the different target groups.

Table 2: ADAPT-WAP project components and financing

Project components	Expected outcomes	Expected outputs	Concerned countries	Budget ($US)
Component 1: Integration of Climate Change and Emergency Plan (MREWS) aspects in the management of the WAP Complex	The climate dimension, and its risks, as well as the emergency plan, are integrated into the development and management plans of the complex.	The technical documents integrating the climate change are elaborated and annexed to the master development plan (MDP) and the development management plan. (DMP)	WAP Complex (Benin, Burkina, and Niger)	190.000
		The regional adaptation plan and the technical annexes integrating the climate change in the Communal Development Plans (CDP) bordering the WAP are elaborated.	WAP Complex (Benin, Burkina, and Niger)	170.000
Subtotal 1				**360.000**

Component 2: Design and implementation of a multi-hazard early warning system (drought, floods, and fires)	The early warning system is used by beneficiaries to manage emergencies	EWS is designed and validated	WAP Complex (Benin, Burkina, and Niger)	220.000
		EWS is functional and deployed	WAP Complex (Benin, Burkina, and Niger)	1.210.000
		Contingency plans for disasters are set up	WAP Complex (Benin, Burkina, and Niger)	870.000
Subtotal 2				**2.300.000**
Component 3: Improving the resilience of ecosystems and the livelihoods of populations and users through the implementation of concrete adaptation actions	The resilience of populations and ecosystems is improved through concrete adaptation measures	Livestock transhumance corridors are arranged and pasture areas are created with the involvement of local labor	WAP Complex (Benin, Burkina, and Niger)	1.020.000
		Water points are arranged/rehabilitated in the complex with the involvement of the local labor	WAP Complex (Benin, Burkina, and Niger)	620.000
		The tracks in the protected areas are maintained with the involvement of the local population or the co-management structures (High intensity of labor)	WAP Complex (Benin, Burkina, and Niger)	470.000
		Agroforestry and small irrigation are applied	WAP Complex (Benin, Burkina, and Niger)	570.000
		Activities for sustainable fishing for the benefit of the neighboring villages	WAP Complex (Benin, Burkina, and Niger)	470.000
		Wooded and pastoral areas are improved and reforested	WAP Complex (Benin, Burkina, and Niger)	1.200.000
	Populations resilience to CC is strengthened and their standard of living is improved through income generating activities	Revolving funds set up to diversify sources of income	WAP Complex (Benin, Burkina et Niger)	90.000
		Income generating activities are supported	WAP Complex (Benin, Burkina et Niger)	1.710.000
Sub Total 3				**6.150.000**
Component 4: Awareness, communication and capacity building for concerted, integrated and sustainable management of the WAP Complex	Stakeholders are mobilized and sensitized through suitable communication and capacity building	Concerned practitioners, technicians and decision makers are sensitized and trained on environmental issues	WAP Complexe (Benin, Burkina, and Niger)	420.000
		Populations are informed and sensitized	WAP Complex (Benin, Burkina et Niger)	480.000
Sub Total 4				**900.000**
Total of components (1,2,3 and 4)				**9.710.000**
Execution costs				**922.450**
Implementation costs				**903.750**
Project Total costs				**11.536.200**

4. Projected Calendar

N°	Steps	Planned Dates
1	Start of the project	Jan-2019
2	Mid-term evaluation	June-2021
3	Project closing	Jan-2023
4	Terminal evaluation	April-2023

PART II: PROJECT JUSTIFICATION

A. Project components

The ADAPT-WAP project aims to strengthen the resilience of ecosystems against climate change and improve the living conditions of the populations bordering the WAP complex through the establishment of a multi-risk Early Warning System and the implementation of concrete adaptation measures. The project will also consolidate the synergy between the three beneficiary countries by strengthening the sustainable and participatory management of the complex and natural resources by helping to resolve conflicts between different users. The project is structured into components, results, outputs, and activities.

Component 1:

Integration of Climate Change and Emergency Plan (MREWS) aspects in the management of the WAP Complex

The WAP complex is of particular interest to the West African ecoregion because of its ecological importance and because it offers habitat for a diverse fauna and flora. Despite the threats related to the impacts of climate change and the increasing pressure of the riparian populations on natural resources, the WAP complex remains one of the main Sudanese ecosystems well conserved. National initiatives and regional projects/programs have been implemented to provide managers of the WAP complex with common management tools (Master Development plan) and park management tools (Development and Management Plans). Despite the extent of its risks to ecosystems and the lives of neighboring populations, climate change is not sufficiently taken into account in the management tools of the WAP complex. To this end, the project aims to support national and local stakeholders through a regional approach that integrates environmental and climate change concerns and identifies measures aimed at protecting, safeguarding and managing climate change.

The project will carry out various studies aimed to integrate concrete adaptation measures into the available WAP complex plans (master development plan -MDP, the development management plans-PAGs and the communal development plans-CDP).

Results (Outcome) 1.1: The climate dimension and its risks, as well as the emergency plan, are integrated into the development and management plans of the complex ".

The process of integrating the climate dimension and its risks into the different management plans of the WAP complex (MDP DMPs and CDPs) and the development of an adaptation action plan require a preliminary study. These studies will help to define a consensual approach to the integration of the climate change dimension and the development of a methodological guide. The available data and information related to the different ecosystems and entities of the WAP complex will be used to harmonize the management tools and improve the Geographical Information System (GIS). Finally, adaptation actions will be identified and organized to develop the regional adaptation action plan.

Output 1.1.1: Technical documents incorporating CC are developed and annexed to MDP and DMPs

The master development plan (MDP) of the WAP Complex is a consensual tool for guiding sustainable management of the complex to the benefits of local populations and sub-regional integration. The importance of integrating climate change into the MDP is that it provides strategic directions for planning and sustainable management in response to key issues and challenges of the WAP complex governance. While the development and management plans of the WAP

components are the result of a consensus between the various actors involved in the management of the WAP complex. It is also tools to pool the efforts of the development partners, local populations, forest administration, non-governmental organizations, private operators and local communities at the regional level. To achieve these objectives, it will be necessary to develop a methodology for integrating the climate change adaptation issue into the MDP and the PGA of the WAP complex Protected Areas (PAs) that could lead to a consensual guide and tools of the integration. Those documents (appendices/addendum) will be validated through a workshop, bringing together the decision-makers and actors concerned by the WAP complex management. The improvement of the Geographic Information System of the WAP complex will involve the updating of the thematic maps: land use maps, vegetation fire map at the scale of the complex and incorporated in the management tools of the WAP complex. To achieve this, the project will use high-level consultancy and experts to update the information on these different themes and propose a long-term strategy of integrating climate change into the MDP and the DMPs of the blocks Arly-Pendjari and W.

The experiences and lessons learned from the development of these tools should be used to produce a training module on integrating climate risks into the management and conservation of protected areas sector. The activities of this output are as follows:

- Activity 1.1.1.1: Develop the methodology for integrating the climate change adaptation issue in the Master Development Plan (MDP) and Development and Management Plans (DMPs) of the WAP Complex Protected Areas,
- Activity 1.1.1.2: Organize a workshop to validate the methodological guide,
- Activity 1.1.1.3: Develop a technical annex integrating climate change into the MDP and the development and management plans of the WAP complex.
- Activity 1.1.1.4: Organize two (02) regional workshops to validate the technical annex of the MDP and the technical annexes of the DMPs of the blocks Arly-Pendjari and W
- Activity 1.1.1.5: Update the Geographic Information System of the WAP complex
- Activity 1.1.1.6: Organize a workshop to validate the updated GIS of the WAP complex.

Output 1.1.2: The regional adaptation plan and the technical annexes integrating the CC into the communal development plans (CDPs) of the communes bordering the WAP are elaborated

The project will set up an operational stakeholder platform to facilitate dialogue between decision-makers from different sectors and countries around the integration of climate change adaptation into the management measures of the WAP complex. The Climate Change Adaptation Action Plan (PA / ACC / WAP) will serve as a Practical guidance tool for the stakeholder platform. Countries should take the ownership of this stakeholder platform and ensure its sustainability. To develop the regional action plan, it is necessary to describe the resources of the fauna and flora, their state and the threats they face and involve concerned the actors in the identification of the priority adaptation interventions to be carried out. This will contribute to the identification of controlled silvicultural interventions that will be used to recreate or restore forest ecosystems or similar habitats of the WAP complex and to limit the negative consequences of climate change.

According to the assessments carried out in the communities bordering the WAP complex, it appears that they do not have the required capacities to develop tools or methods to integrate climate change adaptation actions into the local development policies. To do so, the project will support the actors of these communities through the development of technical annexes to facilitate the consideration and integration of climate change issues in the communal development plans, in order to meet the complex challenges addressed by climate change.

It will be necessary to evaluate the changes of the climate, as they are perceived by the local populations, to realize study of vulnerability, and to elaborate the plan of adaptation. These three

main steps allow to identify the most affected sectors by climate change and to identify the most realistic measures to put in place. All in a given time and with officials appointed at each stage.

In addition, the process must involve communities from the outset, so that concerned stakeholders take ownership of the proposed actions. The first activities will focus on identifying vulnerable sites based on the climate change vulnerability report. The identified vulnerable sites to climate risks may cover communities, ecosystems (forest area, river, pond, water point, and pasture area), a protected area (eg W / Benin Park, Arly) or a geographical area (common). The classification of vulnerable sites will be the subject of a report to be validated by the actors concerned. The project will support the organization of a stakeholder workshop to prioritize and retain the different sites that will benefit from adaptation actions.

Finally, different steps would try to highlight the role of youth women, the specific challenges faced, the need to develop their adaptation skills. Impact chains contribute to an understanding of vulnerability that can then be operationalized but still, they can be the driving force behind the initial collective brainstorming session on potential adaptation measures. The ADAPT-WAP project, through a workshop that brings together the actors involved, the stakeholders to validate the technical annexes containing the Action Plan for climate-friendly adaptation measures to climate change. The main activities planned are:

- Activity 1.1.2.1: Develop a climate change adaptation plan for the WAP complex
- Activity 1.1.2.2: Organize a regional workshop to validate the CC adaptation plan of the WAP complex
- Activity 1.1.2.3: Develop technical annexes integrating climate change into the communal development plans of the communes bordering the WAP complex
- Activity 1.1.2.4: Organize national workshops to validate the climate change adaptation technical annexes of the development plans of the communes bordering the WAP complex.

Component 2:

Design and implementation of a multi-hazard early warning system (drought, floods, and fires)

The natural disasters are one of the most serious threats to the WAP complex ecosystems and its neighboring populations. To better prepare the concerned actors, this component aimed to establish a relevant and effective operational Early Warning System at the WAP complex level. The implementation of the early warning system and its detailed emergency response plan will help to minimize the negative impacts of natural disasters at the WAP complex level. The emergency response plan will be available to the users and stakeholders involved in the WAP complex management.

Outcome 2.1. Early Warning System (EWS) is used by beneficiaries to manage disasters, risks, and emergencies

The Early Warning System (EWS) will be made available to users including the population, protected area managers, and forest, pastoral and agricultural area managers. The EWS provided by the project will be adapted to the local context (municipalities) and the socio-ecological specificities of the WAP complex in order to prepare for disasters and climatic hazards, as well as the management of emergencies and risks. The thematic studies and the necessary equipment and materials are programmed at this level to allow better control by the units in charge and the different users. The proposed activities and actions in this outcome are as follow:

Output 2.1.1: The EWS is designed and validated

The project will support the realization of basic studies to better build the EWS. A first study will aim at deepening the design of the hydrometeorological monitoring network will be carried out at the beginning of the implementation of the project. It may help to identify, the number, the model, the

geographical position, the settings of measurement and remote transmission of the hydrological and meteorological stations, as well as the characteristics of the computer server in respect to the quantity of data to be managed and the flow of treatment to be operated. This study will also help to estimate time of recording end transmission the various environmental variables (weather, hydro, and surface conditions in particular), to a server specifically dedicated to receiving data.

The next two studies will focus on adopting a forecasting model for each risk (flood, drought). This is a technical study that will focus on the scientific prediction of the data in order to define for each measured and collected data (quantity of rain at a station, temperature, wind, water level at a station, etc.), the treatment modalities. The first analyzes required, and the validation and quality control procedures, the methods for calculating and predicting the guide variables (a guide variable is a parameter generally measured or estimated from the combination of several variables measured or not, and where the values of that parameter are sufficient to indicate the occurrence of a risk and its degree of risk). This operation uses the modeling of the processes involved. The guide variables are generally outputs of forecasting models. The following two studies aimed at developing thresholds and alert levels for each risk. The alert level to adopt will be retained.

Generally, the early warning systems for natural hazards such as drought or flood have 4 levels:

- the green which corresponds to a normal situation without any danger,
- the yellow which corresponds certainly to a deterioration of the current situation which is normal and however remains always safe,
- the orange which corresponds to a significant deterioration of the situation compared to the normal one and likely to cause moderate dangers with the beginning of losses and damages,
- and the red one which corresponds to a significant or extreme degradation the situation in relation to the normal and causing dangers with significant losses and damages.

Finally, this study will determine the alert thresholds (an alert threshold is a value of a variable which corresponds to the entry into a given level of alert). The determination of these alert threshold values must take into account the economic value of the losses and damages incurred by the level of risk involved (a flood of 2 meters of water would certainly produce minor damage in the uninhabited forest area, but dramatic consequences in densely populated urban areas, and the 2-meter threshold of flood water, which would represent an extremely rare event in the hydro-climatic sense, may well not require warning in an unoccupied zone, but at a red alert in urbanized area).

The last study will focus on the development of a Standard Operating Procedure (SOP) for communication and warning dissemination. The project will facilitate the organization of the management of the EWS by adding the appropriate instructions for the warning dissemination. Depending on the level of risk (usually, the level of risk turns red), the intervention of a country authority (Minister, CEO, etc.) may be necessary to trigger the alert. To quick dissemination quickly the information to reach as soon as possible the populations at risk or the authorities in charge of the management of the parks, the warning dissemination is generally organized according to a protocol or Standard Operating Procedure for communication and dissemination of alerts in case of disaster. This instrument of centralization and transmission of the alert must be developed and effectively enforced in regulatory (decree or decision of the Minister in charge of disaster management). It will give the alert to the exposed population in time as soon as the information is confirmed by a Forecasting and Warning Cell set up for this purpose. It will be a question of defining the methods of control by human being following the detection of a critical situation by the server and before the emission of an alert towards the competent services and exposed populations.

The development of the communication tool and its periodicity of appearance is the second part of this last study. For example, the development of a warning bulletin because it is a communication tool that is not scientific, although it presents technical details relevant to the action of crisis and disaster managers. It must include graphs and maps indicating the risk involved and the level of

warning and the areas concerned. A technical and institutional prototype of the EWS will be designed and validated at the same time with the studies within regional workshops bringing together all the actors involved in risk and disaster management at the WAP Complex level.

- Activity 2.1.1.1: Carry out 6 preliminary studies for EWS implementation (from hazard identification and risk assessment to EWS design leading to alerts)
- Activity 2.1.1.2: Design an EWS prototype at technical and institutional levels
- Activity 2.1.1.3: Organize two (02) regional workshops to validate the studies and the EWS prototype

Output 2.1.2: EWS is functional and deployed.

The material and equipment requirements for the implementation of the EWS in the WAP complex have been specified and validated for all stage of the system establishment, namely the real-time data collection, the analysis and treatment of the data, and the warning and broadcasting forecasts. The sites of installation, the actors concerned the risks (flood, drought, and bushfires) management are known. Acquisition and installation procedures for materials and equipment will be done according to project management standards.

The project activities will then focus on the functioning of the EWS and the strengthening of the technical capacity of the regional and national EWS management units (the official launch of the EWS and the definition of the principles or rules for triggering the alert, the elaboration of the warning bulletins and the determination of the broadcast mechanism by authorized actors through appropriate channels to identified targets within a compatible time frame with emergency response). Indeed, the warning bulletin is the first element of the alert itself.

The warning can be disseminated through several channels, including:

1. SMS depends on the coverage rate of the mobile phone around in the WAP complex. The project will facilitate the availability of this useful tool for the EWS so that SMS alerts are sent to people in targeted geographical areas to inform them of the risk and how to manage it;
2. Voice telephone alerts in local languages: In addition to SMS the EWS will carry out automated voice calls in order to reach as many people as possible. Thus, populations in risk areas will receive phone calls where a preprogrammed robot will transmit alerts in the local language;
3. Mobile applications: Smartphones allow complex information to be broadcast beyond voice and text or other means.

The planned activities for this output are the following:

- Activity 2.1.2.1: Acquire and install observation equipment (weather stations, limnigraphs, sensors, piezometers ...)
- Activity 2.1.2.2: Acquire IT equipment (servers, processing units, software, GPS ...)
- Activity 2.1.2.3: Acquire tools and materials to broadcast the warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)
- Activity 2.1.2.4: Rehabilitate /build offices for the management units
- Activity 2.1.2.5: Formalize the national EWS management units at the three countries level
- Activity 2.1.2.6: Organize the EWS National Management Units meetings
- Activity 2.1.2.7: Organize regional and national training sessions on the EWS (about the use, the data processing, indicators set-up, including the community-relays set up...)
- Activity 2.1.2.8: Product and disseminate the warning messages (bulletin, maps, radio message synthesis, SMS, digital media)

Output 2.1.3: Emergency plans for disasters are put in place

The risks and natural disasters are hard to avoid. Thus, to reduce their negative impacts on natural ecosystems and the local population, the project will support the establishment of a backup device

to prevent of relief in the event of disasters or major events or major risks, endanger the health of people, animals (wild or farmed), natural ecosystems or the integrity of goods.

Emergency plans will be drawn up by the separate entities (municipalities, at the WAP complex level) having to carry out emergency actions when a catastrophic event occurs. Through its activities, the project seeks to reduce the impact of disasters, particularly on men (the dead and the wounded), socio-economic and environmental infrastructures, and to increase the capacity of local communities, civil society and other associations working in the humanitarian field to enable them to face the most urgent situations of vulnerability.

Ultimately, promote the culture of disaster prevention and risk reduction, through the popularization of practices and new approaches that are aimed primarily at the protection of the environment and the conservation of achievements for sustainable development. One of the priorities of the ADAPT-WAP project and involved actors is to improve the capability of local and regional disaster response in order to intensify their intervention with vulnerable communities in several areas (health, risk reduction, disasters). In this way, emergency plans must integrate national and regional systems and define the general procedure for managing disasters and emergencies and dealing with victims in order to limit the damage. This is to proceed with the implementation of the actors' capacity reinforcement, their equipment (vehicles, fire engines, bicycles, motorcycles, canoes, inflatable boats), an appropriate and efficient organization by rationalizing practices that will contribute to improving response in its emergency and early recovery component under one command and through effective coordination. The internal monitoring activities of each component of the WAP complex will be supported through donations of logistics, tracking equipment and transport equipment (pick-up vehicles, motorcycles, canoes, inflatable boats and specific accessories) to the management units. The planned activities are:

- Activity 2.1.3.1: Develop an emergency plan for CC disasters at each country level
- Activity 2.1.3.2. Organize training sessions on the emergency plan for the various actors involved in the three countries
- Activity 2.1.3.3. Acquire disaster management equipment (3 pickup vehicles, motorcycles, canoes, inflatable boats and specific accessories ...)
- Activity 2.1.3.4: Implement three (3) blank operations (disaster management simulation exercises).

Component 3:

Improving the resilience of ecosystems and the livelihoods of populations and users through the implementation of concrete adaptation actions

Climate Change shows obvious impacts on natural resources, as well as on the population' standard of living and quality of life in the WAP complex and adjacent communes. The activities of this component will focus on concrete adaptation measures to be implemented in the bordering localities of the WAP complex in order to reduce the vulnerability of communities to climate change. Part of the allocated resources will be used to develop and implement contingency plans to mitigate the impacts of climate risks on populations. Actions aimed at diversifying livelihoods and setting up resource mobilization and preservation structures will also be developed in the most vulnerable areas. These adaptation measures and actions to be undertaken by the Project will help maintain the ecological balance of the WAP complex and improve the adaptive and resilience capacity of the local population. The key themes on which the work will focus are natural ecosystems (water, soil, forest and pastoral ecosystems) as well as current social practices such as transhumance, overgrazing, illegal logging and other ecosystems degradation-inducing practices.

Measures to improve infrastructure for farmers and fishermen and pastoralists, silvopastoral developments and a revolving system will also be supported.

Outcome 3.1: The resilience of populations and ecosystems is improved through concrete adaptation measures.

The project will ensure the implementation of several activities aimed at reducing the impact of climate change on the integrity and balance of natural resources, particularly on natural ecosystems, in order to maintain and support their ecosystem services. It will also improve the populations and ecosystems' adaptive capacity to climatic hazards and natural disasters through concrete adaptation measures: specific infrastructure developments (water points, transhumance corridors...) or through measures allowing the development of other sectors such as agroforestry, small irrigation.

Output 3.1.1: Transhumance corridors for livestock are developed and rest areas created with the involvement of the local labor force.

Transhumance is one of the major anthropic practices threatening the integrity of the various components of the WAP complex.

The ADAPT-WAP project will put a particular emphasis on this theme by accompanying stakeholder consultation meetings (inter-communal association and customary bodies in Benin, association of Tapoa breeders and local authorities in Burkina Faso, management committee for space and food, pastoral infrastructure in Niger) in order to retain the secondary corridors and the ECOWAS corridor in a participatory manner. Studies will be carried out to define, with the local actors, the techniques and the model for the materialization and marking of transhumance corridors. The work will be carried out by prioritizing the local workforce and the corridors retained in the DMP as well as the grazing areas at the point of water equipped with watering places. The activities of this output are structured as follows.

- Activity 3.1.2.1: Organize meetings for consultation and validation of the transhumance corridors selected in the localities/villages crossed
- Activity 3.1.2.2: Carry out transhumance corridors development studies (36 km on RN19 PNA, 70 km on ECOWAS corridor 3 at W / BF, 110 km of local corridors in W / Benin and 110 km on ECOWAS Corridor No. 4 in Niger)
- Activity 3.1.2.3: Carry out work of materialization and marking of the transhumance corridors in and around the APs of the WAP complex (36 km on the RN19 PNA, 70 km on the corridor 3 of the ECOWAS at the W / BF, 110 km local corridors in W / Benin, and 110 km on ECOWAS Corridor No. 4 in Niger)
- Activity 3.1.2.4: Construct watering places and pasture areas at previously completed water points

Output 3.1.2: Water points are developed/rehabilitated in the complex with the involvement of the local workforce

The maintenance and development of wildlife are highly dependent on water in terms of its availability and distribution. The availability of water positively influences the diversification of pastures, especially in the critical season. In this context, one of the necessary adaptation actions is to create or develop water points in the WAP complex that are adapted to the monitoring system. To this end, the project will enhance the results of the studies of available water points spatialization in order to jointly retain stakeholder's development priorities and equipment that will be subject to technical studies prior to their development.

So, the activities of this output are:

- Activity 3.1.1.1: Organize consultation workshops to validate the locations of priority water points (21 water points)
- Activity 3.1.1.2: Conduct technical studies for water point development
- Activity 3.1.1.3: Carry out the development and equipment work (pumps, solar panels, ponds, etc.)

Output 3.1.3: The tracks of the WAP complex are maintained with the involvement of the local population or the structures of joint management by HIL

One of the key conservation factors of the WAP complex is the control of wildfires or bushfires. To do this, the project will assist the parks management authorities to solve the monitoring problem by dividing the parks into management areas through inter-linked tracks. The objectives of providing protected areas with tracks are to facilitate timely access to wildlife monitoring areas and to serve as appropriate firebreaks for habitat protection against uncontrolled fires. In this context, the project will support the maintenance of existing tracks and the opening of some of them by involving the local workforce. The capacity building of the identified actors will allow the maintenance work using the HIL method to be carried out at the indicated periods by relying on sketches of devices implemented within the WAP complex.

The selected activities are:

- Activity 3.1.3.1: Organize a regional technical workshop for the validation of the tracks to be maintained in the complex
- Activity 3.1.3.2: Rehabilitate tracks by the HIL method (W / Benin 800 km, W / Burkina 825 km W / Niger: 825 km of runway

Output 3.1.4: Agroforestry and small irrigation techniques are applied

The benefits of adaptation measures to be implemented in the adjacent localities of the WAP Complex will include improving economic productivity and contributing to the improvement of people's livelihoods. It is for these reasons that the project intends to support the actors (small farmers, young women, and other marginalized groups) in the implementation of measures allowing the development of other sectors such as botanical gardens, the production of medicinal plants for marketing, agroforestry, small irrigation. The capacity of the concerned parties (men/women) will be developed to set up individual or collective plantations or with the aim of producing wood and small-scale irrigation and climate-resilient crops. Restoration and regeneration methods will be disseminated to control the management of natural woody stands.

- Activity 3.1.4.1: Implement training sessions for farmers from riparian villages of the WAP complex on agroforestry techniques
- Activity 3.1.4.2: Acquire agro-forestry plants and make them available to volunteer farmers
- Activity 3.1.4.3: Acquire and grant small irrigation equipment to market gardening groups

Output 3.1.5: Activities for sustainable fisheries for the benefit of the riparian villages

In order to support the sustainable exploitation of the fisheries resources of the watercourses of the WAP complex, the ADAPT-WAP project plans to reinforce the capacity of the actors (Protected Areas Management Agency, the association of national and regional fishermen) to work for the implementation of the fisheries management strategy adopted by the WAPO Council of Ministers. For example, sections of rivers and streams where only subsistence fishing is permitted will be identified and mapped. The project will identify the key beneficiary actors (fishermen, female fishmongers) in order to strengthen their technical capacities (training and recycling sessions) and material (conservation equipment) for fishermen in the priority localities.

Through these actions, the project will contribute to reducing pressure on the water resources of the WAP Complex, which already faces several Climate and Human pressure constraints that considerably affect the sustainability of its resources and its production capacity. These actions will also help improve the resilience of the Complex adjacent fishermen population to the adverse effects of climate change, notably, watercourses degradation both in terms of quality and quantity (rivers and ponds pollution, depletion, and silting, etc.). In fact, the representatives of fishermen who took part in the different consultation workshops have expressed the need for training on aquaculture

technique in order to compensate for the decrease of fishing resources in the authorized areas. In addition, the involvement of the riverside communities in the fabrication of adapted equipment and management of basins will facilitate the ownership of good fishing practices in sustainable perspective. The specific hydraulic installations /development will contribute to increasing the fishing capacity of the local communities while promoting the conservation of the fishery resources of the Park's central areas.

Finally, the activities proposed by the project will contribute to the integration of fishery management modes in the Complex's water plans as recommended in the report "In-depth Diagnosis of fishery and watercourses management in the wildlife reserves", "the WAP management plan" and the "Strategy for a sustainable fishery in the WAPO Complex."

- Activity 3.1.5.1: Identify and train women fishmongers and fish processors on the use of new tools produced by the population
- Activity 3.1.5.2: Equip women fishmongers and processors with fish products (produced by the population)
- Activity 3.1.5.3: Identify and train members of fishermen's groups on improving fishing and fish breeding techniques
- Activity 3.1.5.4: Conduct technical studies for the management of fish breeding sites
- Activity 3.1.5.5: Implement fish pond development works

Output 3.1.6: Wooded and pastoral areas are improved and reforested

The main problems of livestock farming in peripheral areas of the WAP complex are overgrazing, pastoral-farmer conflicts and the effects of climate change on pastoral resources. The project will work to support village stakeholders in management options and development of pastoral areas through activities of concerted delimitation and development of grazing areas and capacity building of stakeholders in the localities concerned. Thus, the following activities have to bee undertaken:

- Activity 3.2.1.1: Organize national validation workshops for areas to be reforested and routes to be improved (3 areas / 50 ha of grazing land per country along developed corridors
- Activity 3.2.1.2: Implement reforestation works in villages bordering the WAP complex
- Activity 3.2.1.3: Conduct development studies of grazing areas-
- Activity 3.2.1.4: Implement delimitation and development of grazing areas
- Activity 3.2.1.5: Implement assisted natural regeneration activities for riparian villages

Outcome 3.2: Resilience of populations to climate change is strengthened and their livelihood is improved through income generating activities

The involvement of the population and the improvement of their living conditions is one of the conditions for the success and sustainability of the ADAPT-WAP project. In this context, it is suggested to strengthen the resilience of the local population through the establishment of a micro-financing mechanism to accelerate the diversification of income-generating activities for beneficiaries.

Output 3.2.1: Leverage funds put in place to diversify sources of income

The establishment and piloting of a leveraged fund mechanism to support the diversification of income sources contribute to the reduction of local poverty. It is for this reason that a part of the project's resources will support, among other things, the modalities of creation, the elaboration of rules and regulations establishing eligible diversification activities, the value chain to promote, the conditions of access to leverage funds, the domiciliation of the fund, the search for approval required by the competent authorities for its establishment and the mobilization of additional resources from other partners in order to further support the offer of leverage or renewable funds.

- Activity 3.2.1.1: Elaborate the mechanisms and procedures for accessing leveraged funds for the diversification of IGAs
- Activity 3.2.1.2: Organize information workshops on leverage funds for young people, women, and men
- Activity 3.2.2.3: Develop an Operational Manual for IGAs

Output 3.2.2: Income-generating activities are supported

Alternative and resilient income generating activities (IGA) such as beekeeping, production of essential oils, valorization of NTFPs (shea butter, baobab, moringa, néré, tamarind, balanites, gums), production and processing maintenance of improved economic stoves and the construction of "nature shops" to display and sell local and products made by craftsmen will be promoted in an agricultural value chain development format. Beneficiaries are local professional organizations, local civil society organizations, professional women's groups, young promoters with the assistance of non-governmental organizations (NGOs) and project service providers. The institutional capacity developed will enable vulnerable communities to benefit not only from the project but also potentially from other sources of funding. To achieve these goals, the project will have to strengthen the technical capacity in accordance the option of agricultural value chain promotion and the financial management of micro-enterprises. The project will also support in each community, the development of business plans of promoters or groups of promoters willing to engage in this type of activity. By supporting alternative Income Generating Activities, the project seeks to reduce pressure on ecosystems and improve people's living standards.

When implemented, these activities should be based on the following actions:

- Organize an information campaign to launch the project, explain its objectives and the financing mechanisms of IGAs. Partner structures (NGO, IFM, SFD) can be involved according to an empowering and a cooperation agreement;
- Identify promoters of IGAs and develop and implement a training and organizational and material support plan., material;
- Support the development of a financing plan and implementation of funding

Several business plan models exist and can thus be discussed and implemented, depending on the specificities of the communities. Some will be based on microcredits, while others will be based on subsidies. The development of business models must be done in order to sustain the activity beyond the life of the project.

- Activity 3.2.2.1: Identify and train the beneficiaries on the different IGAs (agriculture, organic farming, breeding, apiculture, distillation, a collection of NTFPs as well as the manufacture of improved stoves and attic supports, etc.)
- Activity 3.2.2.2: Manufacture and disseminate wood saving equipment and techniques (improved salt production stoves, processing of fish products and attic holders for the preservation of food products, etc.)
- Activity 3.2.2.3: Acquire and grant vulnerable women nucleus of small ruminants (goat, sheep, etc.) and poultry
- Activity 3.2.2.4: Support groups of women processors through multifunctional platforms for the processing of non-timber forest products (NTFP: Shea, Baobab, Moringa, Nere, Tamarind, Balanites, Gum Arabic etc.)
- Activity 3.2.2.5: Identify and equip beekeepers in the installation of beekeeping sites in the riparian villages
- Activity 3.2.2.6: Support women's and youth groups for the development of the pharmacopeia and the extraction of oils from aromatic and medicinal plants
- Activity 3.2.2.7: Equip fishermen and fish breeders in the localities bordering the WAP
- Activity 3.2.2.8: Build "nature shops" for the exhibition and sale of local and craftsman-made products at the park entrances

Component 4:

Awareness, communication and capacity building for concerted, integrated and sustainable management of the WAP Complex

The success and sustainability of the project activities are conditioned by the improvement of the change in actors' behavior and beneficiaries and the objectives assimilation, the stakes and the problems of the climatic changes. As such, this component of the ADAPT-WAP project is dedicated to sensitization, communication and capacity building of actors. This component will have transversal activities oriented on the major issues and problems addressed and will concern the different target groups of the project. Apart from the traditional capacity building plans, a part of activities under this component are oriented towards the development of knowledge management strategy and a multi-stakeholder communication and awareness plan that will be used like tools by the managers and project management instances.

Outcome 4.1: "The actors involved are mobilized and sensitized through appropriate communication and capacity building".

All target groups (policy-makers, youth, schoolchildren, and women ...) and direct and indirect beneficiaries of project activities will have their capacity strengthened with the help of environmental education tools and materials to convey messages and concepts related to the themes of the project. The affordable themes are Climate change and its impacts on the WAPC ecosystems, natural disasters, natural resources, biodiversity, etc. The channels, tools and communication and awareness media will be identified by considering the characteristics of the environment. and the means available (radios, SMS, WEB, environment clubs ...).

This result will be implemented through the following outputs and activities:

Output 4.1.1: Practitioners, technicians, and decision-makers on the technical aspects of the project are sensitized and trained on environmental issues

This output aims to raise awareness and build the capacity of policymakers, practitioners, and technicians in terms of Climate Change Adaptation (CCA). Sensitization and technical capacity-building activities will contribute to the creation of a robust information framework that integrates climate change adaptation aspects and is vital for the implementation of the ADAPT-WAP project. Thus, part of the project's resources will be used to identify the information, knowledge management and capacity building needs of the targets in order to develop a capacity building plan and curricula adapted to identified needs.

The second part of this output is to ensure dissemination, the popularization of information in a manner that meets the needs of end users and will support informed decision-making.

- Activity 4.1.1.1: Develop training modules specific to CC and EWS adaptation
- Activity 4.1.1.2. Organize thematic training sessions for practitioners, technicians and agricultural extension workers
- Activity 4.1.1.3. Organize targeted outreach and information sessions for decision-makers in all three countries (simplified training modules)
- Activity 4.1.1.4. Organize three trips/exchange visits, capacity building for park management units on adaptation and EWS

Output 4.1.2: Populations are informed and sensitized

To achieve project's objectives, it is therefore mandatory to ensure the implementation of these activities based on a participatory and multi-stakeholder process that can guarantee the full support of the various stakeholders. To this purpose, the project ADAPT-WAP plans to have a strategy for Information, Education, and Communication of the population on climate change and the

conservation and sustainable management of the WAP complex. To do this, the present output is organized in two parts: a first part that addresses the process of developing an information, education and communication strategy and action plan for behavior change through a consultant's service, a second part which is the implementation of multi-stakeholder tools and supports at the heart of the communication strategy. Finally, it will involve transferring adaptation measures, options and technologies to vulnerable communities in selected regions using information tools and a participatory approach.

- Activity 4.1.2.1: Design and produce communication and public awareness materials (leaflets, posters, flyers, summaries, documentary, local radio spots, telephony application ...);
- Activity 4.1.2.2: Organize sensitization and information days for the population on adaptation to the CC and the EWS at the level of the 19 neighboring municipalities- Activity 4.1.2.3: Design and produce communication and public awareness materials (leaflets, posters, flyers, summaries, documentaries, local radio spots, telephony applications ...);
- Activity 4.1.2.4: Organize education sessions on climate change, adaptation, and management of risks and disasters inherent to it, for the benefit of schoolchildren, in the 19 neighboring municipalities.

B. Promotion of new and innovative solutions to climate change adaptation

The project will develop a new mechanism to address the climate change adaptation dimension by fostering the establishment and operation of a stakeholder platform for dialogue among decision-makers from different country settings around the integration of climate change adaptation into WAP complex management tools. This regional innovation in the management of the WAP complex will be backed up by the establishment of a coordinated planning and implementation exercise for adaptation actions. The multi-actor platform's management by the project will call for an adjustment of the regulations in force in order to give legitimacy to the framework resulting from the consultation made to integrate the adaptation dimension to climate change. The second level of innovation brought by the WAP Adapt project is the control of the occurrence of climate risks through the introduction of a new technology, the early warning system on three risks (flood, drought, bushfires) including two climate risks on the WAP complex. This tool is necessary for ecological and health monitoring of the ecosystems of the WAP complex and for reducing the vulnerability of the riverside population. For the first time, the stakeholders involved in the management of the WAP complex will be organized in a system of implementation of emergency actions. Reducing the vulnerability of the WAP complex also means leading the project to develop an early warning system for bushfires.

On the other hand, the WAP complex and its area of influence, because of its forestry potential, are almost permanently subject to population activities (timber gathering, non-timber forest products harvesting, grazing, and agriculture). The park management departments seem unable to control it or to organize in a sustainable way the development of the peripheral area of the WAP complex. Timber harvesting and non-timber forest product harvesting activities go unpunished.

The project will innovate by supporting stakeholders in promoting the timber saving in local households on the basis of a job creation model. This innovative strategy will make it possible to create private jobs in the localities by emphasizing on the identification and design of adapted models, the capacity building of key actors (craftsmen and women's groups) and the dissemination at the scale of the other riverside villages of new models that have proved their worth. The project's approach will focus on the most vulnerable and wood-consuming localities along the river (presence of fish trade, natron production, processing) and the development of the models selected by country according to the actual situation, the training of core trainers and craftsmen, and the development and implementation of a dissemination strategy for the models developed.

Another innovation of the project is to encourage park managers to create wildlife aggregation areas around water points to be installed by the project, in order to contribute to wildlife safety and especially to the reduction of long routes that expose wildlife to poaching during critical periods (dry season).

Fishing is prohibited in WAP watercourses. However, riparian actors fraudulently use unregulated fishing equipment exposing fishery resources to serious risk of extinction. In order to reduce this pressure related to halieutic resources, the project will support the fishermen by providing some sustainable fishing equipment and promote modern fishing techniques.

With regard to the sustainable management of riparian agricultural lands, the project enables local farmers to recreate better production conditions by popularizing simple agricultural techniques and technologies, at lower cost, adapted to agricultural conditions such as shea grafting, the assisted regeneration of woody species with multiple values and plants with rapid growth and multiple purposes. Similarly, techniques for restoring and reclaiming degraded land in riverside localities in order to increase land availability at the local level, reduce pressure on PA lands and improve community food security.

The discrepancies in policies and strategies between the three countries, inadequate monitoring capacity, lack of livestock reception areas and corridors, and lack of adequate pastoral infrastructure along official transhumance routes are among the factors that attract transhumants to protected areas. Once in the life of the WAP complex, communities involved in this activity agree that the ADAPT-WAP project should support the marking-out of the ECOWAS corridors (N° 3 and 4) and local corridors in the village territories bordering Benin and Burkina Faso. The innovation introduced by the Project is now to create regional or national corridors that will limit the penetration of the WAP complex, alongside water points (equipped boreholes) and developed transit areas.

Finally, to strengthen people's resilience to climate change and improve their standard of living, the ADAPT-WAP project will develop the capacity of beneficiaries to develop income-generating microprojects (IGAs) and implement them through easy access to leveraged funds. The establishment of a leveraged fund for the diversification of income-generating activities is an innovation that will improve the living conditions of the populations and create jobs for the most vulnerable riverside populations, namely young people and women from the localities bordering the WAP complex. Most importantly, this proposed innovative mechanism for direct access to financing at the local level will bring economic, social and environmental benefits to vulnerable communities in the project's target intervention area. The project will carry out a feasibility study of IGAs in an agricultural value chain development format per country in order to retain the most profitable, socially appropriate and adapted to local conditions to be promoted. This study will result in a manual to support and implement IGAs as part of adaptation and vulnerability reduction actions for riverside communities.

C. Economic, environmental and social benefits and gender integration

Because of its geographical location, the WAP complex is identified as of the most vulnerable ecoregions to climate variability and change in West Africa. Therefore, it is necessary to provide benefits at the local level to vulnerable communities through the development and implementation of climate change adaptation activities.

The ADAPT-WAP project will enable beneficiaries to develop income-generating micro-projects (IGAs) and access leveraged funds to implement them to generate benefits at the local level. These recipients are local professional organizations, local civil society organizations, professional women's groups assisted by non-governmental organizations (NGOs) partners in the project. The institutional capacity developed will enable vulnerable communities to benefit not only from the project but also potentially from other sources of funding.

This will result in a potential multiplier effect of local economic, social and environmental benefits during and after the four-year implementation period. As well, the additional benefits resulting from capacity building provided by the WAP Adapt project will include: i) social cohesion and community building; ii) linkages between and integration of climate change adaptation into existing and planned government and donor development initiatives; iii) coordination of funding and responses for climate change adaptation; iv) effective sharing of relevant information; and vi) the development of a national strategy for climate change adaptation.

At the local level, the proposed innovative mechanism for direct access to climate change adaptation financing will bring economic, social and environmental benefits to vulnerable communities in the project's target intervention area. The expected economic, social and environmental benefits of the ADAPT-WAP project are described below.

Economic benefits:

Employment in the form of agricultural and non-agricultural micro-businesses with a developed local supply chain and access to financing for their diversification will be created during the implementation of the project. A livelihoods-focused portfolio of activities will be developed to mitigate risks and reduce community dependence on protected area ecosystems. Restoring forest cover and biodiversity will help improve the quality of the services that the protected area ecosystem would provide to riparian populations. The protective function provided by transhumance corridors, grazing areas and wooded areas, including protection against natural hazards, carbon sinks and prevention of soil erosion and degradation, will have important economic benefits. The project will help farmers improve their farming techniques, promote optimal water use and ensure increased agricultural productivity. The project will build the entrepreneurial capacity of the local community by building strong linkages between business and financial. Average daily returns from adapted livelihoods will be about 70-100% higher than traditional activities, based on previous project experience.

Environmental benefits:

Environmental benefits would include an increased sense of sensitivity and ownership in protected area ecosystem management among community members thereby reducing unsustainable dependence on forest resources for their livelihoods. The project Contribution to climate regulation through the promotion of agroforestry plants made available to identified beneficiaries and the implementation of assisted natural regeneration works for the benefit of riparian populations, the delimitation, and development of grazing areas and the selected wooded areas. It contributes to the reduction of carbon emissions in the air through the activities of promoting wood saving equipment and techniques (supports for the storage of food products, salt production, processing of fish products and activities to maintain biodiversity through the delimitation and management of grazing areas and selected wooded areas. Promoting organic farming, assisted regeneration and improving agricultural production techniques will reduce soil degradation, increase crop yields and improve climate regulation. Increased awareness of the importance of biodiversity conservation will result in sustainable extraction of non-renewable forest products, the creation of governance for sustainable resource harvesting and better management of biodiversity. The floral and wildlife diversity of the WAP complex's protected areas will also improve. Rare and endangered species (*Prosopis africana* as granary fork in Niger; *Tamarindus indica* as structural timber) will no longer be subjected to abuse. Visible habitat enhancement in forest ecosystems will capture more carbon and act as a carbon sink, helping to prevent the increase of CO2 in the atmosphere.

Indeed, the project will contribute to the maintenance and sustainability of these last two species of multiple uses, through several activities and planned measures such as:

- Pastoral improvement activities that will reduce their use for livestock
- Both species will be recommended for reforestation/afforestation and agroforestry activities.
- The development of water points and corridors for transhumant people will also avoid overexploitation of these two species,
- The activities of the assisted regeneration which will be practiced in the limitrophes zones and villages will focus on the rare and menaced species including *Prosopis africana* and *Tamarindus indica*,

On the other hand, the project foresees the implementation of sensibilization and communication activities in relation with the environmental issues of the zone of which the conservation and the durable use of rare and threatened species (information sessions, supports of sensitization...).

Social benefits:

The involvement of women's, youth and men's thematic and gender-balanced organizations at the local level to plan, implement and monitor project activities is one of the main benefits of the project. Leaders and members of specialized community organizations will receive training and workshops organized to resolve problems, including intra-group conflicts equitably, thereby benefiting the community in the project villages over the long term. Through the micro-projects initiated by the project, local populations will be empowered and motivated to participate in community employment creation processes that will help develop a sense of ownership of their own livelihood enterprises. These platforms would also be used to increase community awareness of their rights and establish strong business linkages for their livelihood basket. Many women headed by households find themselves in situations where men in the family have migrated to neighboring cities to work. As a result, they are left very vulnerable and not equipped to manage the household while working for less than subsistence wages to feed their families. Migration exposes the problem more because it leaves women socially vulnerable to stigma, discrimination and health hazards. Raising awareness of gender issues among leaders and members of community organizations will help to integrate gender into the development process at the village level. Village members will also be empowered to collectively protect WAP complex protected area ecosystems and undertake proposed livelihood interventions to build a cohesive relationship between people and protected area ecosystems.

INTEGRATION OF THE GENDER DIMENSION IN THE ADAPT-WAP PROJECT ACTIVITIES

Gender mainstreaming is a prerequisite for assessing the vulnerability of populations concerning the implementation of measures in the field of communication, training, education, awareness, and more concrete, for income generating activities to be undertaken as part of the project development.

In the area of the WAP Complex and outlying villages, the social roles and responsibilities of men and women are set by traditional culture and by certain religious beliefs that are used to explain and legitimize inequalities and disparities between men and women, qualified sometimes of normal, natural or even divine essence.

In addition, inequalities in the sociocultural and religious context mainly concern the persistence of the boy's precedence over the girl in the choice of births, the right of succession and the right of ownership. Inequalities and disparities of labor give women more workload compared to men, to girls compared to boys, with damaging impacts on their health, access to education, productivity, their leisure and their reinvestment in human capital. Furthermore, there are inequalities of access, or the continuation of social exclusion or self-exclusion, particularly of women and young people, girls, and boys, to decision-making processes.

In general, women are present in all sectors of economic activities of the WAP Complex, both in rural and urban areas. Their participation is, however, handicapped by the sexual division of labor which confines them to certain types of activities and by the limited, available time-budget to invest effectively in profitable and well-paid production activities.

Whether it is rain-fed or irrigated agriculture, getting access to land through succession is the dominant mode and is generally reserved for men. But access to land ownership is possible for both, men and women, through acquisition for a fee. Access to finance is also unequal because of the eligibility criteria (yields, productivity, and contribution) that accompany it and which women can hardly meet. In general, the credits allocated to women are small amounts from informal networks and are most often invested in areas other than production. Men, on the other hand, often benefit from more substantial loans for the acquisition of production equipment and marketing.

The declination of the project document and a detailed action plan, the definition, and programming of activities will take into account the gender dimension at the different levels of project implementation. The approach that will be adopted will place gender at the center of the concerns, both in terms of definition and implementation, and monitoring and evaluation of the actions to be carried out.

Indeed, the mainstreaming of the gender dimension in the foreseen activities of the project aims:

- (i) To improve the knowledge and practice of women's human rights, both by women themselves and by other actors;
- (ii) To increase women's access opportunities not only to project-supported activities (lowland development, market gardening, non-timber forest products, etc.) but also to all opportunities and responsibilities within the aboriginal riparian communities and their dismemberment at the local and regional level;
- (iii) To enable a harmonious and equitable evolution of gender relations and division of tasks or responsibilities within households and communities, and
- (iv) To contribute to the attachment of young men to their households.

Women are involved in most of the planned activities of the project. The added value of specific measures, dedicated to women, will improve with regard, among others, to the improvement of production equipment or infrastructure, and access to credit facilities to increase financial capital.

D. Cost-effectiveness analysis

1) Cost/benefit analysis of the project

Project cost and cost per direct beneficiary

This section presents the detailed hypothesis and calculations of the economic analysis of the project. The actual expenditure of the project amounts to US$ 11.536,200 or CFA Franc 6,690,996,000 broken down by component in the table below:

Components	Cost ($)	Cost (CFA franc)
Component 1	360,000	208, 800, 000
Component 2	2.300,000	1,334,000,000
Component 3	6,150,000	3,567,000,000
Component 4	900,000	522,000,000
Component 5	1,826,200	1,059,196,000
Total	11.536,200	6,690,996,000

The project aims to improve the living conditions of at least 60% of the target population. The population bordering the WTBR/Benin is estimated at 759,300 inhabitants, for the ARLY-PENDJARI block is estimated at 328, 009 inhabitants (OFINAP 2015), and totalizing 1,087,309 inhabitants.

In the framework of our project, the targeted population is estimated to 1 090 000 inhabitants. The average household size is 6 persons, so the number of households can be estimated at 181, 667 households.

According to the logical framework data, the targeted population whose living conditions will be improved by the project can be estimated at least 654,000 inhabitants (60%). A total of 654,000 people will be directly affected. Thus, the cost of the project per beneficiary is estimated at 17,5 $ or FCFA 10,000 per beneficiary if it should fully support the implementation of the project.

However, the analysis of the financial profitability is carried out on the basis of the project cash flow forecasts in order to calculate appropriate rates of return, in particular the (internal) financial rate of return (IRR), the (internal) financial rate of return calculated on the investment cost (IRR/C) and the (internal) financial rate of return calculated on own funds (IRR/K), as well as the corresponding net financial present value (NPV).

2) Financial analysis

The financial analysis is conducted from the beneficiaries' point of view and is based on the operating accounts established in the income generating activities report. It ensures the relevance of the activities in terms of profitability and direct benefits for the target groups. The main activities which have been the subject of this analysis are agriculture (maize, millet, cotton and sorghum production, use of forest resources (timber and non-timber products) etc.

In a simplified way, the monetary evaluation of the avoided effects thanks to the adaptation strategies that are the benefits can be summarized in two stages: (1) the physical quantification of the impacts and (2) the transposition of the impacts into monetary terms, which amounts to multiplication of the number of units affected by their monetary value.

The rate of discount is the rate that makes a future income or expenditure comparable to an immediate income or expense. The rate generally chosen reflects the cost of capital, so it will take the market interest rate for a comparable period, or possibly the expected rate of inflation, possibly increased by a risk premium. For the ADAPT-WAP project, the discount rate used is 8%. This rate takes into consideration the rate of inflation and exchange rate risks, political risks, information asymmetry risks in the project area.

SECTION	Year 1	Year 2	Year 3	Year 4
A- Cost components				
Project accounting cost				
Component 1 costs	360 000			
Component 2 costs	1 425 000	685 000	105 000	85 000
Component 3 costs	1 675 000	1 895 000	1 545 000	1 035 000
Component 4 costs	285 000	225 000	215 000	175 000
Implementation costs (management unit)	335 000	215 000	215 000	157 450
Implementation costs (implementation unit)	213 438	203 438	203 437	283 437
Total costs	4 293 438	3 223 438	2 283 437	1 735 887
B) Financial Benefits				
Benefit to the agricultural community	363 000	381 000	419 100	461 000
Benefit to the livestock community	255 000	268 000	295 000	325 000
Benefit to the fishing community	11 000	12 000	14 000	16 000
Benefit to the business community	1 125 000	1 182 000	1 301 000	1 431 000
Benefit to the craft community	311 000	327 000	360 000	396 000
Benefit to the community from wildlife harvesting	373 000	392 000	431 200	475 000
Benefit to the community from the exploitation of forest resources	207 000	218 000	240 000	264 000

SECTION	Year 1	Year 2	Year 3	Year 4
Residual value				1 446 000
Total financial benefits	**2 645 000**	**2 780 000**	**3 060 301**	**4 814000**
C- CASH FLOWS (B-A)	**- 1 648 438**	**- 443 438**	**776 864**	**3 078 112**
D- CASH FLOWS ACTUALISE (C*(1+i[4])^-n)	**- 1 526 331**	**- 380 177**	**616 700**	**2 262 504**
VANF	**972696**			
TIRF	**26,7%**			

The financial analysis shows that the financial benefits of the project outweigh the costs incurred. The main cash outflows required during the project are related to studies, training, investments (infrastructure, computer equipment, rolling stock, development work, etc.). Indeed, the equipment, infrastructure and other materials acquired have a multi-year life, the duration of the project being 4 years, these investments will have a residual value that will be taken into account at the end of the project as an advantage.

The benefits of the projects were physically quantified and then translated into monetary terms. It will be considered as an advantage, the individual effects of the project that effectively contribute to achieving the objectives of the project. Thus, the financial advantages are obtained at the individual level on the basis of the effects that the project will be able to generate at the level of each activity carried out by the various actors involved. The number of stakeholders affected and the benefits are estimated. Net financial flows become positive from the third year onwards. The Net Present Value **(NPV)** is $972,696 or CFA franc 564,163,680. The financial rate of return is **26, 7%. Thus, from the financial point of view, $ 100 invested in this project is expected to generate a profit of around $ 27.**

3) Sensitivity of financial profitability

The two main factors taken into account in the analysis of the sensitivity of financial profitability are an increase in project costs and possibly a decrease in expected benefits. The occurrence of these risks can be minimized by rules of rigorous management of the project resources and a good organization of the implementation through an adequate targeting of the final beneficiaries.

Hypothesis 1: increase in project costs

Non-controllable risks by project teams in WAP countries are related to the increases in project costs due to changes in exchange rates, political risks, and asymmetric information risks. These elements can lead to an increase of the project costs outside inflation. The change in the exchange rate is an important element that must be emphasized because, unlike the euro, whose exchange rate is fixed in relation to the FCFA, the dollar remains a currency that fluctuates considerably.

	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
NPV ($)	874 421	776 145	677 869	579 593	481 317	383 042	284 766	186 490	88 214	-125 830
IRR	24,5%	22,4%	20,3%	18,4%	16,5%	14,6%	12,8%	11,1%	9,5%	7,8%

The simulation analysis shows that with a 1% to 10% increase in project costs, the NPV goes from $874,421 to a negative value of -$-125,830. Thus, we note that from an increase of 10% the NPV takes negative values. This reflects an output of the profitability threshold of the project. The IRR of the project from the financial point of view goes from 24.5 to 7.8%. This indicates that the ADAPT-WAP project is profitable but that the profitability can be experienced by a significant variation of costs during the project implementation. Hence the need to respect the planned costs during the implementation phase of the project, or to maintain their variation within a maximum of 10%.

[4] i=8%

Hypothesis 2: Decrease in projected benefits during the implementation

	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
NPV ($)	864694	756691	648688	540685	432683	324680	216677	108674	67200	-207930
IRR	24,5%	22,3%	20,1%	18,0%	16,0%	13,9%	11,9%	10,0%	8,0%	6,1%

The NPV is canceled for a 9 to 10% decrease in the benefits generated by the project and the IRR increases from 8% to 6%. This indicates the limit of the decrease in benefits expected. It can be concluded that with a decrease in benefits in the margin of 1 to 9%, the ADAPT-WAP project remains profitable for beneficiary households.

Hypothesis 3: Increasing Costs and Decreasing Benefits

	1%	2%	3%	4%	5%
NPV ($)	766418	560139	353861	147582	-58696
IRR	22,3%	18,2%	14,3%	10,6%	7,0%

The cross-effects of simultaneously increased costs and decreases in benefits result in NPV cancellation between 4% and 5%. This indicates that the ADAPT-WAP project can withstand the costs increase combined with a reduction in benefits to an extreme limit of 1 to 4%. The probability of occurrence of these variations is, however, very low because many other benefits related to the implementation mechanism in order to avoid climatic disasters (early warning system in particular) are not taken into consideration in the current simulation.

4) Overall economic analysis

The economic analysis follows financial evaluation to the extent that it initially uses the same flows, similarly it provides additional criteria by introducing an economic perspective.

The economic evaluation of a project, unlike the financial evaluation, allows the project to be refocused at the community level. It is then considered as an actor of regional economic development and a focal point for the propagation of collective well-being. Economic profitability is then defined, no longer in relation to its ability to generate a residual income for the investor, but rather in reference to its effects on macroeconomic aggregates (natural investment, economic growth, employment, inflation, etc.). It is therefore based on the interactions between the project and its physical and social environment within a region of the WAP complex.

In view of the strong social and environmental nature of the ADAPT-WAP project, the analysis of economic profitability was limited to the following criteria: Capital - Labor and Cost-Benefit. In the ADAPT-WAP Project area where capital is scarce and abundant unskilled labor, the capital-labor ratio is taken into account in the project assessment. In this case, the goal is to increase employment and to redistribute income. The economic benefits obtained, the net updated value for the entire program and the overall economic rate of return (EIRR) are considered.

The other types of benefits that will be associated with the project interventions are: i) the creation of jobs along with a strong use of the local workforce and the resources related to IGAs that will be put at the beneficiaries' disposal , ii) the construction of "nature shops" for the exhibition and the sale of local and artisanal products at the park entrances; iii) the construction of water points equipped with water troughs and rest areas; iv) the development of transhumance corridors for livestock; v) the maintenance and rehabilitation of existing WAP tracks; vi) the development of small livestock for the benefit of women (goat / sheep, pigs and poultry); vii) improving the living conditions of women; viii) the development of beekeeping production; and ix) the valorization of NTFPs (shea butter, baobab, moringa, néré, tamarind, balanites, gums).

SECTIONS	Year 1	Year 2	Year 3	Year 4
A- Cost components				
Project accounting cost				
Component 1 costs	360 000			
Component 2 costs	1 425 000	685 000	105 000	85 000
Component 3 costs	1 675 000	1 895 000	1 545 000	1 035 000
Component 4 costs	285 000	225 000	215 000	175 000
Implementation costs (management unit)	335 000	215 000	215 000	157 450
Implementation costs (implementation unit)	213 438	203 438	203 437	283 437
Total costs	**4 293 438**	**3 223 438**	**2 283 437**	**1 735 887**
B- Economic benefits				
Job creation for the community	**381 000**	**762 000**	**1 142 000**	**1 523 000**
Improvement of living conditions				
Improvement of women's living conditions	163 000	326 000	489 000	163 000
Improvement of men's living conditions	48 000	97 000	146 000	195 000
Improvement of children's living conditions	1 000	1 000	2 000	2 000
The valuation of NTFPs	11 000	21 000	33 000	44 000
Improvement in tax revenues due to increased activities	1 242 000	1 366 000	1 490 000	1 614 000
Other economic benefits for the community	198 000	397 000	595 000	794 000
Total economic benefits	**2 044 001**	**2 970 000**	**3 897 000**	**4 334 999**
C- NET ECONOMIC FLOWS (B-A)	**- 2 249 437**	**- 253 438**	**1 613 563**	**2 599 112**
D- CASH FLOWN (C*(1+i5)^-n)	**- 2 082 812**	**- 217 282**	**1 280 899**	**1 910 425**
Current Net Economic Value	**891 230**			
Internal Economic Rate of Return (IERR)	**23,2%**			
profit/cost ratio	**14,8%**			

The benefits of the project were made on the basis of the benefits aforementioned. The internal economic rate of return (IERR) of the project is **23,2 %,** while the Current Net Economic Value is 891 230 US$ or 516, 913, 400 FCFA. The profit/cost ratio is 14,8%.

5) Sensitivity of economic profitability

Hypothesis 1: increase in project costs

The increases in project costs due to changes in exchange rates, political risks, and asymmetric information risks. These elements can lead to an increase of the project costs outside inflation. By simulating an increase of the costs in a margin of 1 to 10%, we obtain the following results:

	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
NPV ($)	792 954	694 678	596 402	498 127	399 851	301 575	203 299	105 023	6748	-213 707
IRR	21,3%	19,5%	17,7%	16,0%	14,4%	12,7%	11,1%	9,6%	8,1%	6,6%

The analysis of the simulation shows that with an increase going from 1 to 10% of the project costs, the NPV goes from 792 954$ to a negative value of -213 707$. Which means an exit from the threshold of the economic viability of the project. The IRR of the project from the financial point of view goes from 21.3 to 6.6%.

It shows that the ADAPT-WAP project is profitable but that attention needs to be paid to avoid an increase in costs beyond 9%. Project management in the implementation phase will, therefore, have

[5] i=8%

to ensure compliance with projected costs and even try to reduce them to reduce sensitivity and increase profitability.

Hypothesis 2: Decrease in projected benefits during the implementation

By reducing the benefits of the ADAPT-WAP project from 1 to 9 percent the economic NPV is zero for an 8 to 9 percent decrease in expected benefits across the project and the IRR increases from 8.6 to 6.8 percent.

	1%	2%	3%	4%	5%	6%	7%	8%	9%
NPV ($)	784042	676853	569665	462477	355289	248101	140913	33725	-73463
IRR	21,3%	19,4%	17,6%	15,7%	13,9%	12,1%	10,3%	8,6%	6,8%

It can be concluded that with a decrease in benefits within 1 to 8%, the ADAPT-WAP project remains profitable for the beneficiary communities

Hypothesis 3: Increasing Costs and Decreasing Benefits

Simultaneous variation of costs and benefits leads to the following table:

	1%	2%	3%	4%	5%
NPV ($)	685766	480302	274838	69374	-136090
IRR	19,5%	15,9%	12,4%	9,1%	5,9%

The combined effects of simultaneous cost increases and decreases in benefits translate into a cancellation of the economic NPV between 4% and 5%. This indicates that the ADAPT-WAP project can stand up to increased costs combined with a reduction in benefits to an extreme limit of 1 to 4%. The probability of occurrence of these variations is, however, very low because many other benefits related to the implementation mechanism and to avoid climatic disasters (early warning system in particular) are not taken into account in the current simulation. From the analysis, it appears that the ADAPT-WAP project is economically and financially profitable.

E. Consistency with development strategies

The WAP Adapt project is strongly aligned with a number of national and regional policies, plans and priorities for sustainable development and adaptation to climate change. The project will be implemented in accordance with international and national standards of the three countries in relation to national adaptation strategies and action plans, biodiversity management, combating land degradation, land, environmental, water and ecosystem management and poverty alleviation.

Each of the three States, taken individually, has defined and attempts to implement policies aimed at the protection and rational exploitation of natural resources and the preservation and sustainable management of the environment with a view to ensuring their citizens sustainable, balanced and harmonious development that respects the environment. The following table presents a summary analysis of all these policies and strategies applicable to the implementation of this project.

Table 3: Summary of policies and strategies applicable to the implementation of this project

Sectors covered	Country	Established policy and strategic framework
▪ Town and country planning ▪ Environmental Management ▪ Fight against climate change and desertification ▪ Natural resources management ▪ Poverty Reduction and	Benin	▪ Declaration of National Spatial Planning Policy (DEPONAT) Adopted in November 2002; ▪ National Sustainable Development Strategy (NSDS) ▪ National Environmental Management Policy in Benin revised in 2007 and divided into 7 programs; ▪ Strategic Vision of Benin to Horizon 2025 from National Long-Term Perspective Studies, Benin 2025 Alafia; ▪ Growth Strategy for Poverty Reduction (CPRS 2011-2015, developed in 2010);

Sustainable Development		▪ National Water Policy elaborated in October 2008 with the Strategy for Integrated Water Resources Management (IWRM); ▪ National strategy to combat climate change ▪ National Action Plan to Combat Desertification (PANLCD) ▪ National Action Plan for Adaptation to Climate Change (PANA 1 in 2008) ▪ National Strategy to Combat Air Pollution ▪ National Pollution Control Plan (PNLPo) ▪ National Wetland Management Strategy ▪ National Biodiversity Management Strategy and Action Plan
▪ Territorial development ▪ Environmental Management ▪ Combating climate change and desertification ▪ Natural resources management ▪ Poverty Reduction and Sustainable Development	Burkina Faso	▪ Accelerated Growth and Sustainable Development Strategy; ▪ National Policy on the Environment, adopted by the Government in January 2007; ▪ National Land Use Policy, adopted by the Government by Decree No. 2006-362/PRES/PM/MEDEV/MATD/MFD/MAHRH/MID/MECV;
▪ Territorial development ▪ Environmental Management ▪ Combating climate change and desertification ▪ Natural resources management ▪ Poverty Reduction and Sustainable Development	Niger	▪ Combating desertification which dates back to 1984; ▪ National Environment Plan for Sustainable Development (PNEDD), which serves as National Agenda 21 ▪ Strategy for Sustainable Development and Inclusive Growth-Niger 2035 ▪ Land use and development policy; ▪ 3N Initiative "Nigeriens Feed Nigeriens" starting in 2012

In Benin:

As part of the implementation of National Agenda 21, the Beninese Government has developed a National Sustainable Development Strategy (NSDS). This document was approved in September 2005 by stakeholders and adopted by the Government of Benin in March 2006. The NSDS is accompanied by objectively verifiable indicators and mechanisms for the efficient implementation of National Agenda 21.

It provides a reference framework for the development of a dynamic between all the actors involved in the implementation of Agenda 21 and the integration of the sustainable development dimension in any development activities at both local and national level.

The NSDS, divided into 8 chapters, presents two strategic areas of development, namely:

- Strategic sectoral areas (forestry, agriculture, livestock, fisheries, biodiversity, tourism, health, pollution, water resource protection);
- Cross-sectoral strategic areas (legislative and regulatory framework, macroeconomic framework, education, training and research, democracy and good governance, gender and sustainable development, ICT, poverty reduction, credit system and international cooperation).

Since 1999, Benin has been engaged in the development and implementation of poverty reduction strategies. After the Interim Poverty Reduction Strategy (IPRS), drafted in 2000, Benin developed three (3) other poverty reduction strategy papers.

Strategies are as follows:

- The Poverty Reduction Strategy (PRS 1) for the period 2003-2005, which served as a strategic framework for reference and dialogue with Technical and Financial Partners (TFPs);
- The Growth Strategy for Poverty Reduction over the 2007-2009 triennium (CPRS 2);
- The Growth Strategy for Poverty Reduction (GPRS 2011-2015). It is the result of a broad participatory process that has closely involved the public administration, economic operators

and civil society at every stage. Overall, the SCRP is inspired by the long-term vision described in the *"Etudes Nationales de Perspectives à Long Terme (ENPLT),* "Benin-Alafia 2025" and is based on the Strategic Development Orientations (OSD) defined by the Government in 2006. It will contribute to the achievement of the Millennium Development Goals (MDGs) and a mechanism for resource mobilization and coordination.

To secure land ownership, the actions undertaken by the Government include:

- The development of a national land policy
- The outcome of the rural land law and the elaboration of rural land plans;
- The development of cadastres in urban centres;
- Improving the mapping and topography capacities of institutions in charge of land;
- F ormalization of land ownership rights at a lower cost;
- Information, education, and communication for the population
- The improvement of land registration and information management services and the conversion of traffickers in dangerous products into other fields of activity.

This project meets the orientations and objectives of Benin's National Action Plan for Adaptation to Climate Change (NAPA) developed in 2008 in accordance with the requirements of the United Nations Framework Convention on Climate Change.

This NAPA provides for several priority adaptation measures and activities, including among others:

- Urgent adaptation measures in all sectors including agriculture, forestry, and rangeland,
- Establishment of a climate risk prevention and early warning system for food security,
- Adaptation of households to climate change through the promotion of renewable energy and energy-efficient pressure cooker households
- Mobilization of surface water for adaptation to climate change in municipalities

Finally, the project responds to UNDAF outcome 6 (United Nations Development Assistance Framework) of Benin "By the end of 2018, the institutions and populations of the municipalities of intervention ensure better management of the environment, natural and energy resources, living environment, as well as the consequences of climate change, crises, and natural disasters".

In Burkina Faso:

Burkina Faso's sustainable development has achieved remarkable environmental, socio-economic and cultural results. On the environmental level, many achievements have been made in the field of research in water and soil conservation (drip irrigation, impluvium, etc.), grafting techniques for several wild fruit trees (shea, néré, balanitès, etc.), and in the field of water and soil conservation (drip irrigation, impluvium, etc.).), the introduction of species or varieties of forest and agricultural species with high economic value and productivity, the development of energy-saving technologies (improved stoves, pressure cookers).

In addition, new and renewable energy technologies are being implemented (individual or collective indirect or direct solar dryers, solar water heaters, biogas installations for methane gas production, biodigesters), sustainable management of natural resources (delimitation and securing of managed areas, implementation of sustainable management plans for natural forests, pastoral or silvopastoral areas) and the development of new energy sources.

Despite the progress made, significant constraints remain.

To address this situation, Burkina Faso has put in place policies and strategies to promote the environment and natural resources[6] such as:

- Poverty Reduction Strategy Paper 2000-2010 (PRSP).

[6] Source: National SD Policy in Burkina Faso, October 2013

- Rural Development Strategy 2015 (2003).
- Energy Sector Development Policy Letter (ESDP, 2000).
- Action Plan for Integrated Water Resources Management (IWRM) (2003).
- Action Plan and Investment Program for the Livestock Sector (APIPLS/*PAPISE*) (2009).
- National Strategy for Environmental Education (NSEE/*SNEE*) (2001).
- National Action Plan for Environmental Education for Sustainable Development (EESD/*PANEDD*).
- National Population Policy (PNP, 2010).
- National Gender Policy (PNG, 2009).
- National Action Program to Combat Desertification (PAN/LCD) (1994).
- National Strategy and Action Plan on Biological Diversity.
- National Strategy (also called National Communication) on Climate Change (2000).
- National Program of Action for Adaptation to Climate Variability and Change (NAPA, 2006).
- National Forest Policy (PNF, 1996).
- National Environnemental Policy (PNE, 2006).
- Environment Plan for Sustainable Development (PEDD, 2006).

In terms of adaptation to climate change, Burkina Faso has had a NAPA implemented since 2007 which has enabled a complete diagnosis of the vulnerability of the various sectors and subsequently an inventory and prioritization of activities, measures, and projects. Moreover, the activities that were considered priorities in Burkina Faso's NAPA were as follows:

- Early Warning Systems,
- Promotion of irrigation
- Development, Management of water bodies,
- Fodder production,
- Development of natural formations,
- Fight against silting,
- Optimization of Irrigation
- Securing pastoral areas
- Promotion CES/DRS
- Wildlife and Habitat Management
- Protection of water against pollution
- Promotion and improvement of homes

It should be noted that the ADAPT-WAP project is in line with many of the activities listed above and will, therefore, support the implementation of some priorities such as EWS and wildlife and habitat conservation throughout the project area.

Finally, the project responds to UNDAF Burkina Faso outcome 1 "accelerated economic growth is sustainable and pro-poor".

In Niger:

In Niger, the National Environment Plan for Sustainable Development (PNEDD)[7] is considered the National Agenda 21. It was drawn up in 1998 with the aim of broadening development options and ensuring their sustainability for future generations. Its aim is to create favorable conditions for improving food security, solving the domestic energy crisis, improving health conditions and economic development of the population.

[7] source CHM, Niger

To do so, the NESDP pursues four (04) complementary sub-objectives:

- Ensure a more rational management of natural resources in the framework of the fight against desertification by promoting a more global (systemic) approach to the issue;
- Integrate environmental concerns into the definition of policies, programs, and projects implemented in each of the main development sectors;
- Encourage the involvement, empowerment, and participation of populations in the management of resources and their living space, and thus contribute to the preservation and improvement of their living environment;
- Promote the development of an effective partnership between stakeholders interested in the issue of the environment and sustainable development in Niger.

The NESDP includes six (06) priority programs that are:

- The National Action Program to Combat Desertification and Natural Resources Management;
- The Biological Diversity Management Program;
- The Climate Change and Variability Program;
- The Water and Sustainable Development Program;
- The Urban Environment and Living Environment Program;
- The Energy and Sustainable Development Program.

Niger's National Adaptation Action Plan (NAPA), developed in 2006, identified several priority activities related to several sectors. This project will contribute, while remaining in line with its objectives and scope, to implement some activities.

Finally, the project responds to UNDAF Niger outcome 1 "By 2018, vulnerable households and targeted communities increase their resilience in terms of food and nutrition security, environment, disasters and socio-economic inclusion".

F. Alignment with national technical standards

The project has been examined by OSS for environmental and social risks. The limited adverse impacts that could emanate are mostly related to Component 3 of the project which will concern the implementation of concrete adaptation actions in the project sites. The project falls within the Category B rating of the Environmental and Social Policy of the Adaptation Fund.

The project will be implemented in accordance with the international and national standards of the three countries in relation with national adaptation strategies and action plans, biodiversity management, combating land degradation, land-use, environmental, water and ecosystem management, and poverty alleviation, as mentioned and described above.

During the project implementation process, OSS and the project local executing entity, as well as the regional and national partners, will ensure that the project in its four components complies with the procedures described by the Adaptation Fund’s Environmental and Social Policy.

The project implementation units of the three beneficiary countries will also ensure that all relevant national technical standards, laws and bylaws for construction and infrastructure, biodiversity and forest conservation, health (fauna/men), are respected. To this end, all project activities will be implemented in close collaboration with the technical departments of the Ministries of Environment, Water, so as to ensure compliance with the relevant standards and technical guidelines in each of the three countries. Overall, the project has been designed to comply with all relevant national and international laws, regulations and technical standards related to improving the resilience capacity of the local population in the project target areas. Labor laws related to HILF will also be fully considered in line with international standards.

The table below presents the relevant national standards of the three concerned countries.

Countries	Relevant Standards
BENIN	• Act No. 90-32 of 11 December 1990 establishing the Constitution of the Republic of Benin lays down certain principles relating to the environment and the living conditions of citizens. • Article 22: Everyone has the right to property. No one may be deprived of his property except in the public interest and against fair and prior compensation. Article 27 stipulates that everyone has the right to a healthy, satisfactory and sustainable environment and the duty to defend it. The State shall ensure the protection of the environment. Article 74: The State President will be accused of high treason for a number of acts, including an act that violates the maintenance of a healthy, satisfactory, sustainable and development-friendly environment. And article 98: establishing the field of the law which determines, inter alia, the fundamental principles of the protection of the environment and the conservation of natural resources. • Framework Law on the Environment, its implementing decrees. The general principles governing environmental impact assessment are laid down by Act No. 98-030 of 12 February 1999 on the framework law on the environment. • Decree No. 2017 - 332 of 06 July 2017, on the organization of environmental assessment procedures in the Republic of Benin. This decree lays down the procedures under which environmental studies are carried out and the procedure by which the Ministry in charge of the Environment can ensure compliance with environmental standards, require corrective measures and take sanctions in the event of deliberate non-compliance or repeat offenses. • Decree No. 2001-096 of 4 April 2001 on the structure, organization, and operation of the environmental policy and bylaws. The Environmental Police, placed under the authority of the Minister in charge of the Environment, has the essential task of preventing, investigating, detecting and punishing infringements of environmental legislation, including, inter alia, water pollution, and soil pollution, in collaboration with the relevant authorities. • Decree N ° 2001-2035 of 12 July 2001 on the organization of environmental impact assessment procedure • Decree No. 2001-190 of 19 June 2001 on the organization of the Public Hearing process in Benin • Law on management of land and federal code (*Loi N° 2013-01 of 14 August 2013 on tenure and land code in the Republic of Benin*) • Law on Prevention and Repression of Violence against Women (*Loi N°2011- 26 of 9 January 2012 portant prévention et répression des violences faites aux femmes*) • Labor Code (Code du travail Loi n°98-004 du 27 janvier 1998) • Law No. 2002-016 of 18 October 2004 on the regime of wildlife in Benin • Law No. 87-013 of 21 September 1987 regulating the grazing vain, for the care of pets and transhumance, with Order No. 12 of 165/MDRAC/DGM/DAFA/SAA (June 1989) and two inter-ministerial orders (1994) • Law No. 2010-44 of 21 October 2010 concerning water management in the Republic of Benin • Law No 87-015 Act of 21 September 1987 on the Code of Public Health of the Republic of Benin • Law 93-009 of 2 July 1993 governing forests in the Republic of Benin (*Loi n° 93-009 of 2 July 1993 portant régime des forêts en République du Benin*)
BURKINA FASO	• Law on Environmental Code (Loi n°006-2013/AN *portant Code de l'Environnement du Burkina Faso)* • Decree No. 2001-342/PRES/PM/MEE of 17 July 2001, on the scope, content, and procedure of the environmental impact study and notice (Ministry of the Environment and the Environment, 2007). The administrative procedure for the environmental impact assessment is based on this decree. It classifies projects and programmes into three categories: (1) Category A: Activities subject to Environmental Impact Assessment (EIA); (2) Category B: Activities subject to Environmental Impact Statement (EIS); (3) Category C: Activities not subject to EIA or EIS. • Decree No. 2001-185/PRES/PM/MEE of 7 May 2001, setting standards for the release of pollutants into the air, water, and land. Articles 6, 10 and 11 of the Regulation respectively lay down standards for discharges of emissions from fixed installations, standards for discharging wastewater into the surface water and standards for discharging wastewater into sewers.

	• Orientation Law on Water Management (*Loi nº 002/2001/AN portant loi d'orientation relative à la gestion de l'eau*) • Law No. 034-2002 / AN of 14 November 2002 on the framework law on pastoralism in Burkina Faso. • Law N° 006/97 / ADP of 31 January 1997 on the Forestry Code in Burkina Faso • Law on Agrarian and Land Reorganization (*Loi portant Réorganisation Agraire et Foncière (RAF) 034-2012/AN)* • Law No. 23/94 / ADP of 19 May 1994 on Public Health Code in Burkina Faso • Law on Cultural Patrimony protection (*Loi n° 024-2007/AN portant protection du patrimoine culturel au Burkina Faso)*
NIGER	• Act No. 98-56 of 29 December 1998 on the Framework Law on Environmental Management. Article 31 of the Act stipulates: "Development activities, projects, and programs which, because of their scale or their impact on the natural and human environment, may affect the latter shall be subject to prior authorization by the Minister in charge of the environment...» • Ordinance No. 93-013 of 2 March 1993 instituting a public health code in Niger. Article 4 of the Public Health Code prohibits any person from producing or holding waste in conditions likely to create harmful effects on the soil, flora, and fauna, to damage the landscape in general, to harm human health, domestic animals and the environment, and is required to ensure its disposal or recycling. • Ordinance No. 97-001 of 10 January 1997 on the institutionalization of Environmental Impact Assessments. Article 4 of the Ordinance stipulates: "Development activities, projects or programs which, because of their scale or their impact on the natural and human environment, may adversely affect the latter shall be subject to prior authorization by the Minister in charge of the Environment. This authorization is granted on the basis of an assessment of the consequences of the activities, project or program updated by an EIA prepared by the Promoter". • Decree No. 2011-057 amending and supplementing Decree No. 2000-272/PRN/PM of 4 August 2000 of 27 January 2011, specifies in its Article 3 that: "The CNEDD is the coordinating and monitoring body for activities relating to post-Rio conventions [...]. As such, it is the national political focal point for the follow-up of the implementation of these conventions. • Decree No. 2000-397/PRN/ME/LCD of 20 October 2000 on the administrative procedure for environmental impact assessment and review. This decree specifies the administrative approach to be followed for the integration of environmental concerns into the planning of socio-economic development programs, projects, and activities. • Decree n° 2000-398/PRN/ME/LCD establishing the list of activities, works and planning documents subject to environmental impact studies of 20 October 2000. This decree specifies the list of Activities, Works and Planning Documents subject to EIA. • Order N° 96-067 of 9 November 1996 covering rural cooperatives • Order No. 93-15 March 2, 1993, on the principles of Orientation of the Rural Code • Order No. 2010-09 of 1 April 2010 Water Code in Niger • Law 2004 - 040, June 8, 2004, covering the Forestier in Niger • Law N° 98-007 29 April 1998 laying down the rules of hunting and the Protection of wildlife

The national and international standards related to weather and climate information will also be respected so as to ensure quality outputs in this regard.

With reference to the quadripartite WAP agreement signed, any project implemented on the WAP complex is required to monitor and comply with regional and national technical standards and relevant policies and legislation. The ADAPT-WAP project is collaboratively selected for submission to the AF through a national and regional consultation process in order to take into account local and regional realities. This process allowed the project to be designed with a clear focus on agreed decisions.

The project implementation will be carried out under the supervision of the Technical Monitoring Committee (TMC) consisting of the Directors General in charge of Protected Areas of the Ministries in charge of Protected Areas, representatives of the local decentralized administrations of the WAP

Complex, representatives of local communities, grassroots community organizations, private operators, technical and financial partners, projects and other stakeholders who contribute to the management and financing of the WAP Complex.

The implementation of the WAP Adapt project will be governed by the institutional management and guidance of the WAPO agreement, the Technical Monitoring Committee (TMC) will serve as the Regional Steering Committee in consultation with local beneficiaries and stakeholders. This process will ensure that the ADAPT-WAP project always reflects local circumstances, aspirations and builds on national and regional actions and capacities.

The Technical Monitoring Committee will organize annual special meetings and will ensure that the principles, as well as national and regional technical standards for the management of protected areas, are respected during the project duration, as well as all the guarantees are given specifically to the AF for the project-funding.

The ADAPT-WAP project respects all the environmental and social policies of the AF, including the necessary safeguards integrated into the project through environmental and social assessments and implementation through mitigation monitoring and evaluation. The project will also comply with the relevant regional community and international standards and conventions.

A project grievance mechanism will be introduced in all target communities so that to ensure the existence of a mechanism for stakeholders to communicate and receive feedback on any problems regarding the project implementation, including problems related to environmental and social standards.

G. Project duplication

In the ADAPT-WAP project area, we can identify several projects and previous programs relating in particular to natural resources and ecosystems management including:

The Sahelian Africa Protected Ecosystems Project (ECOPAS), which has had remarkable results in terms of research, ecological restoration, conflict mitigation and a regional approach promotion. In contrast, the ECOPAS project underwent a certain heaviness of implementation, which did not achieve sustainability in terms of ownership and financial viability. It is in this framework that the lessons learned point to the need to (1) Ensure that the future projects for the management of protected areas support the national and regional institutions in charge of the latter without that assistance does not substitute for their role (2) to support the intervention logic based on a clear analysis of the causal links between problems to be solved and thus to conceive and refer to a coherent logical framework stemming from this analysis and which serves as a real working tool managers in charge of the execution of project activities

Entente Parc support program, continuation in time and space of the ECOPAS / W program concerns the national parks of W, Arly, and Pendjari (WAP complex), as well as adjacent protected areas and their peripheral areas contiguous to Benin, Burkina Faso, and Niger. The overall goal is to contribute to biodiversity conservation and ecosystem services for sustainable development in West Africa. Specifically, it will be necessary to sustainably strengthen WAPO complex ecosystems conservation in a regional perspective and optimize the benefits for the local population. The major constraint of this PAPE program stems from an institutional and contractual arrangement that contradicts the imperatives of regional coordination and co-responsibility that should prevail in a regional program. The notion of subsidiarity was totally forgotten in the institutional and contractual set-up, which did not make it possible to ensure coordination and therefore the program effectiveness. The Support Programme to the Management of Protected Area (SPMPA/*PAGAP*), launched in October 2011, aims to strengthen the biodiversity protection in Savannah ecosystems in northern Benin, through conservation measures and anthropic pressure reduction on park resources. In order to achieve this

objective, SPMPA is broken down into three components relating respectively to strengthening the capacity of CENAGREF and its Decentralized Directions (DPNP and DPNW) in the management of northern Benin Savannah ecosystems, the implementation of Income Generating Activities to reduce human pressure on wild fauna and flora, and finally the establishment of a mechanism for sustainable financing of conservation by finalizing documents and tools for implementation of the West African Savanes Foundation

These projects, as we could see, were mainly aimed at improving management approaches at the regional level for the sustainability of its resources and also improving the living conditions of the local population. However, after achievements analyze, it turns out that the results are not satisfactory. The latest W park development and management plan (2017-2026) finalized in September 2016 with the support of UNDP and EU, as well as the two development and management plans (DMP) of Arly Park in Burkina Faso and Pendjari (Benin) developed in 2016, are the most recent guidance and management documents for the WAP complex. These new management tools have been developed taking into account the lessons learned from past initiatives, including the implementation of development and management plan of W Park.

The Transboundary Block W Planning and Management Plan (2017-2026) is a strategic planning document for operational planning. The vision as identified at the level of this plan is: "By 2032, the conservation of biodiversity in the W Park transboundary biosphere reserve is a successful sub-regional and environmental governance model". The general objective is "to consolidate the achievements of the cross-border management of the Park W we contributing to the sustainable development of the riparian populations".

The ADAPT-WAP project is in perfect harmony with this vision and objective. It will contribute to their achievement through activities and program measures.

Moreover, the 10 management priorities in the PAG are clearly complementary to the outcomes and outputs of this project. These include the conservation of biodiversity, monitoring, ecological monitoring, infrastructure strengthening, communication, awareness, communication etc …

The implementation of the ADAPT-WAP project will be closely monitored by the managers and custodians of protected areas of the WAP complex. The latter will also be the direct managers of the implementation of the provisions of the PAG and this can ensure the complementarity and the harmonization with the components and activities of the project.

In fact, these Development and Management Plans are mainly aimed at consolidating the achievements of cross-border and communal management of these different protected areas (WTBR, Arly, and Pendjari) while contributing to the sustainable development of local populations. Specifically, it is:

- Strengthen the management system of WTBR, Arly, and Pendjari
- Conserve biodiversity and habitats of the WTBR in a concerted manner;
- Promote the development of wildlife populations through a management and sustainable management strategy,
- To serve as an open space for the knowledge improvement, environmental education and the setting up of technical and scientific relational networks;
- Promote shared management with local communities in order to contribute to their sustainable development,
- Develop adapted tourism offers and services,
- Promote equitable distribution of benefits from the sustainable development of biodiversity between public institutions, the private sector, and local populations,
- Meet the requirements of UNESCO World Network Heritage of Biosphere Reserves of the Man & the Biosphere (MAB).

By analyzing these objectives and components, it turns out that this project comes to fill and complete other components that have not been taken into consideration in other programs and projects such as the current development and management plan DMP. These components include:

- Establishment of an early warning system for natural disasters related mainly to climate change,
- Integration of climate change concepts and contingency plans into the WAP complex management
- Improving the resilience of ecosystems and the surrounding population to climate change,
- Capacity building and improving the awareness level of all stakeholders and target groups.

Also, it should be pointed out that this project will have some flexibility or adaptability to bring the necessary adjustments to strengthen the synergy and complementarity with all other projects and activities to integrate other components/activities without, however, jeopardize the general objectives agreed in advance.

H. Learning and knowledge management component of the project

A series of activities will be supported during the implementation period of ADAPT-WAP project to ensure the generation of knowledge and the development of recommendations to support the scaling and replication of the project approach.

As a first step, the important processes and lessons learned from the project implementation will be well documented and shared among stakeholders and at the level of the entire region. These activities will be an integral part of the existing monitoring-evaluation systems or will be designed and used to adjust the future implementation of the project. This activity will also facilitate joint learning and sharing of experiences among various stakeholders. In addition, this participatory and cross-border management experience of the WAP complex will serve as a pilot to replicate in other areas of the region and elsewhere.

The following table (x) provides information on existing constraints/baseline situation and proposed activities/orientations as part of the project knowledge management strategy

Constraints /Basic situation	Proposed activities
Absence or lack of best practices and approaches in the region in: ▪ Preventive Natural Disaster Management and Early Warning Systems (EWS) around the EWS complex, ▪ Consideration of CC adaptation measures in the WAP complex management, ▪ Community management of crises and emergencies, ▪ Monitoring of income-generating activities for the benefit of the local population, ▪ Link between scientific knowledge and local know-how ▪ Coordination and partnership of stakeholders for joint action and implementation at local and regional level.	▪ Conduct 6 preliminary studies for EWS implementation (from hazard identification and risk assessment to EWS design leading to alerts) ▪ EWS prototype design at the technical and institutional level, ▪ EWS implementation related to EWS ECOWAS, EWS Burkina, EWS UEMOA• Identification and implementation of adaptation measures, ▪ Establishment of a community management mechanism involving the population ▪ Facilitating the learning and exchange of successful experiences of this project as well as lessons learned, ▪ Documentation of response strategies to assist the future design and extension of project interventions, and influence policies/practices

In the second phase of knowledge management activity during the implementation of the project, workshops will be organized to collect input from stakeholders for the creation of a knowledge management strategy. On this basis, a knowledge management plan will then be created and, as a result, the implementation of the component will be initiated.

The project is expected to create and develop knowledge material, both printable and audiovisual, and disseminate it through a series of workshops at local and regional levels for the identified

stakeholders. Output 4.1.1 is used to focus and disseminate knowledge material on themes in order to strengthen their capacity for greater resilience.

Workshops and education campaigns of awareness and communication, the creation, and animation of environmental clubs for the riparian community, will focus on the creation and dissemination of knowledge material that will help the community to strengthen its resilience by changing behavior. Knowledge materials such as a module for school staff and students, short films, brochures and pamphlets containing the best practices for the villagers/farmers in the local language will be available, designed to be disseminated. These campaigns are also proposed in order to encourage the local leaders who decide about the different conservation measures at the local level.

On the other hand, workshops at the regional level should be organized to disseminate learning, models, and processes that strengthen the resilience of communities against the climate change and can be replicated in similar contexts at the international scale. The lessons learned from the project will be brought to the attention of policymakers and managers of protected areas of States, through a planned dialog on the occasion of the regional workshops. In addition, possibilities for dissemination through regional and international conferences, publications in journals and books, or Web content will be explored. In order to create a platform for communication, it is planned the creation and animation of a web radio to reach the general public in terms of knowledge management. The Web radio will host all the information collected and created in the framework of the project.

I. Consultative process

The idea of submitting a project request on the WAP complex to the Adaptation Fund was expressed through discussion meetings with the major stakeholders in Benin, Burkina-Faso, and Niger. These exchanges and discussions with the different stakeholders in the three countries: Benin (Centre National des Réserves de Faune (CENAGREF), in Niger (the General Directorate of Water and Forests (DGEF) and the National Center for Environmental Monitoring and ecological (CNSEE)-(National Level PMUs)) and Burkina Faso (the Directorate General of Forests and Water-DGEF) have led to the elaboration of the ADAPT-WAP project request.

The Sahara and Sahel Observatory (OSS) has established, in the course of the second half of 2016, contacts and exchanges with the Adaptation Fund which have resulted later in the submission of a concept note.

The first regional consultation meeting organized by OSS i from 3 to 5 February 2017 in Tapoa (within the W-Niger Park) saw the participation of the park Managers (Directors General), policy-makers and the WAP complex managers (including the 3 W parks) at the national and local levels, riparian populations, the customary authorities and producers associations in the three countries. The objectives of this workshop were the following:

- Inform partners and beneficiary populations about the project scope and objectives;
- Take into consideration the expectations and needs of participants in terms of project activities.

The recommendations and suggestions of the participants have been taken integrated into this document.

The list of stakeholders consulted during the project document development process is presented below:

No	Organizations
National level	
1	Benin : Le centre national de gestion des réserves de faune (CENAGREF)

2	Burkina Faso : la Direction Générale des Eaux et Forêts (DGEF)
3	Niger : * La Direction Générale des Eaux et Forêts (DGEF) *Le centre National de Suivi Environnemental et Ecologique (CNSEE)
Local level	
1	The conservationists of the W Parks
2	Representatives of the W Parks

The first regional meeting, 3 to 5 February 2017, Tapoa/W-Niger Park

The consultation workshops were structured around the following points:

- Involvement and improvement of the local populations' living conditions
- Key stakeholders, their roles, responsibilities, and contribution during the project implementation
- Strengthening the project management structures,
- The reinforcement of awareness and communication activities among the various stakeholders.
- The role of women and young people in the project implementation
- Complementarity and synergy with other existing projects.

The project implementation will be based on the participatory approach involving the representatives of the three countries, existing management structures which will be strengthened, and the local communities which will also have an important role to play in implementing the project components/activities.

Consultative meetings in Cotonou: 26 October 2017

OSS organized a second regional consultation meeting on the project in Cotonou on 26 October 2017.

In line with the recommendations of this regional consultation workshop, a regional engineering office was contracted by OSS to support the elaboration of the ADAPT-WAP project full document. The ACDD consulting firm, after meeting on Saturday 6 January, 2018 set up the conceptual framework of the mission determined by taking into consideration the data and information available on the complex WAP, the methodological approach to collect and analyse the necessary information and data for the development of each specific theme that to be used in the development of the Full Proposal. The participants to this mission are presented in the table below.

During the regional consultation held in Cotonou on 26 October 2017, the project managers/participants agreed to organize 3 other national workshops and a regional workshop to be devoted to the discussion and exchanges between the different participants and actors. In accordance with its policy, OSS focuses on the involvement of the local population and beneficiaries in all stages of its projects/programs design and implementation.

The consultation workshops were held respectively in Diapaga (Burkina Faso) on February 28, 2018, in Kandi (Benin) on March 2, 2018, and on March 4, 2018, in Tapoa (Niger). These meetings brought together the project actors and beneficiaries from the different concerned countries and allowed to discuss the project activities and the realities of the localities bordering the WAP complex. *(The workshop minutes are annexed to this document).*

Consultation meetings respectively in Burkina Faso, Benin, and Niger: 28 February to Mach 4, 2018

The main purpose of these various public consultation missions was to seek the beneficiaries' points of view and to collect information for a better design of the project, and that by involving vulnerable groups, farmers, fishermen, women, and youth. This participatory and information sharing and communication approach followed has led to mutually beneficial exchanges aimed at:

i. ownership of the project by the beneficiaries during preparation and planning stage;

ii. taking into account the concerns of all stakeholders, including vulnerable groups (women, youth, children, heads of localities etc.) in the design and implementation of the project;

iii. exchanges on the financing and sustainability of the project.

Women's presence at the consultation workshops helped to enrich the debate about income-generating activities. In a general context of climate change, the role of women and other vulnerable groups in natural resources management is not sufficiently valued. This is mainly due to the socio-cultural constraints of at the Complex, which hinder the full participation of women and vulnerable groups in adaptation and mitigation measures. For instance, women's participation in meetings was limited before, but thanks to the awareness-raising and training activities, women were able to take part in the project consultation workshops. It the TORs of the ADAPT-WAP consultation workshops, in the section "representatives of the populations", a specific recommendation for the participation of women was included. Indeed, they constitute a marginalized vulnerable group and there is a need to provide equitable opportunities related to gender to enable them to contribute to the economic

and social development and to adapt to climate change. Thus, a minimum total of 15 representatives of the populations (village chiefs, women, youth, farmers, breeders, and fishermen ... .etc.) took part in the national workshops out of the thirty invited participants per workshop.

The highlight of women participation during the different consultation workshops

The main results of the national workshops were:

- Better understanding of the project purposes, its component, and activities;
- Proposals for the reformulation and addition of certain activities;
- Identification of the project intervention sites;
- Identification and quantification of infrastructure and works to be implemented by the project;
- Potential income-generating activities to be adopted by the project;
- Potential adaptation activities to be conducted taking into account the socio-professional realities of the countries.

The group discussion was a qualitative method of data collection during which the different actors met to discuss the project implementation. Exchanges with the potential beneficiaries of the project were sometimes made in local dialects.

Table n: The main actors and beneficiaries met during the project document development phase are:

Date	Participants and Purpose	Place	Attendance list
26-Oct-17	Stakeholders regional consultation meeting	Cotonou	Attendance list in the Annex
12-Jan-18	The recruitment of the ACDD consulting firm to support the formulation of the full proposal		N/A
24 - Jan 25 2018	Data and information collection meeting with members of the Pendjari Park Directorate and 10 AVIGREF members to analyze difficulties and propose solutions	Tanguiéta	N/A
26-Jan-18	Meeting with the Arly park staff	Arly	N/A
27-Jan-18	Debriefing meeting with the conservationist of the W/BF and the representatives of, the riparian populations	Diapaga	Attendance list (Annex)
28-Jan-18	Debriefing meeting with the conservationists of the W/Niger and representatives of the riparian populations	Tapoa	Attendance list (Annex)
01 to 02 February 2018	Debriefing meeting with the conservationists of W/Benin and representatives of the riparian populations AVIGREF	Alfakoara	Attendance list (Annex)

J. Full cost of adaptation reasoning

The increased recurrence and virulence of climatic hazards and natural disasters have created visible impacts and consequences. Due to its socio-economic fragility and its wealth of natural resources, Africa is one of the most affected continents by these disastrous phenomena. Building effective adaptive capacity for communities requires an approach that can bring diverse and conflicting stakeholders together on a common platform. The communities living around the WAP complex are the main stakeholders and, while improving their adaptive capacity, the project strives to create a supportive ecosystem that also encourages the responsible participation of other important stakeholders:

Component 1: Integration of Climate Change Aspects and contingency plan into the management of WAP Complex

Reference scenario: The WAP complex shows a particular interest in the West African Ecoregion because it offers gite and habitat to a flora and fauna diversity that are important in ecology. Despite the threats related to the impacts of climate risks and the increasing pressure of the riparian populations on natural resources, the WAP complex remains the main Sudanese ecosystem space in a good state of conservation. National initiatives, regional projects/programs were implemented and enabled the WAP complex to be equipped with common management tools (Master Development Plan) and by component (Management and Development Plan of W Park and Arly - Pendjari). However, climate change, despite the magnitude of its risks to ecosystems and the neighboring population's lives, is not sufficiently taken into consideration in the management tools of the WAP complex.

In this context of low access to the production technical means, the social and economic vulnerability to natural resources degradation and harmful effects of climate change are remarkable. Rural communities are locked in a vicious cycle of being overexploited with the natural resources they depend on. This is aggravated by population growth as well as the new migratory phenomenon that makes the area a welcoming region for people seeking a generous source of supply, inducing continued pressure on forests, lands, and waters.

Alternative adaptation: Adaptation Fund funding will support regional, national and local actors in an operational approach to integrate environmental concerns, climate change into situational analyzes, and defining environmental issues. and the taking of measures and actions aimed at protecting, safeguarding and sustainably managing the natural resources of the WAP complex taking into account quantitative and qualitative variability aspects. A consensual process of integrating the climate dimension and its risks into the master development plan, the development and management plans of the complex, together with the development of an adaptation action plan, can lead to improving the of the ecosystems resilience of the WAP complex and its neighboring populations. Thus, the project should support the creation and operation of a stakeholder platform to facilitate dialogue between decision-makers in different country sectors around the integration of climate change adaptation into the WAP complex management measures.

A climate change adaptation action plan (PA / ACC / WAP) to be developed on the WAP complex will serve as a compass for the stakeholder platform. Countries should thus strengthen the institutional legitimacy of the stakeholder platform and sustain it once the project is completed

Component 2: Design and implementation of a multi-risk early warning system (drought, floods, and fires)

Reference scenario: Natural disasters are one of the most serious threats to the WAP complex ecosystems integrity. and the local population's security. Recurrent climate shocks negatively affect the region's livelihoods and very sensitive economies and weaken communities' ability to fully

recover, making them even more fragile and vulnerable to future natural disasters. The nature and characteristics of these climatic phenomena are changing: they become unpredictable, more frequent, and increase in intensity and magnitude due to climate change. The region vulnerability is aggravated by the combined effects of socio-economic factors such as extreme poverty, the growing insecurity as well as the growth and demographic trends (notably the migration intra-regional and the increasing urbanization).

However, at the country level, there is a deficit in terms of organizational and human capacity to treat the information and respond to emergencies. At the same time, the concerned countries do not have enough data collection infrastructure. The preparation for emergencies by strengthening the capacity of the actors at various levels to prepare and to sustainably manage the coming unexpectedly of climate risks by the establishment of Early Warning Systems is beneficial

Alternative of adaptation: The ADAPT-WAP project, to better get ready the actors, this component will establish the structure of an operational, reliable, effective early warning system of the complex WAP. The implementation of such an early warning system will help to reduce the negative impacts of natural disasters and with the development and implementation of a detailed contingency plan or emergency response. The financing of the Adaptation Found will improve the collection, analysis, and dissemination of data and information which will update the EWS (alert messages and deployment of the emergency plan), thereby strengthening the resilience of vulnerable populations to extreme events. The Early Warning System (EWS) is at the core of the measures which allow limiting the loss of lives and livelihoods due to hazards and disasters. AF funding is the means by which the project will allow communities empowerment through multisectoral approaches and multi-levels, Integrating as an essential component of the emergency plan and leading to an improvement of the food and nutritional security. This plan will be made available to the different users and stakeholders in the management of the complex WAP including women, the young and the marginalized groups.

Component 3: Improving the resilience of ecosystems and livelihoods of population and users through the implementation of concrete adaptation actions

Reference scenario: The climate change impact is strong until the point the riparian communities' farms of the WAP complex undergo mutations which are reflected by (1) the degradation of fertility, (2) the deforestation and erosion of biodiversity, (3)) the integration into the market economy and liberalization, with its competitiveness requirements, (4) the disadvantaged position for access to resources (water, land in particular) and funding problems as well. This impact has an influence on the most vulnerable groups (women, young people, marginal group) rather than the capital of farms and their results, but also on collective dynamics, all contribute to increase the vulnerability of the poorest. Processing and storage infrastructure for better diversification of local activities and sources of revenue are not sufficiently developed to cope with climate change effects.

Adaptation alternative: The ADAPT-WAP project addresses this need by establishing a mechanism that provides the capacity building support required for community representatives to identify, develop and implement their own climate change adaptation measures. Activities that strengthen the populations resilience by reducing their vulnerability will be implemented through the training of young women and others on specific themes (agriculture, organic farming, breeding nuclei breeders of small ruminants (goat, sheep, etc.).) and poultry, beekeeping, distillation, collection of NTFPs as well as the manufacture of improved stoves and attic supports etc.), the promotion and dissemination of wood saving equipment and techniques with the infrastructure development for vulnerable women and groups of women processors through multifunctional platforms for the processing of non-timber forest products (NTFP: Shea, Baobab, Moringa, Nere, Tamarind, Balanites, Gum Arabic etc.). Actions aimed at diversifying livelihoods and setting up resource mobilization and preservation structures will also be developed in the most vulnerable localities. These measures and actions to be undertaken by the Project in the context of adaptation, will maintain the ecological equilibrium of the WAP complex and improve the riparian population resilience.

Component 4: Awareness, communication and capacity building for concerted, integrated and sustainable management of the WAP Complex.

The success and sustainability of the project activities are conditioned by the improvement of the change in actors' behavior and beneficiaries and the objectives assimilation, the stakes and the problems of the climatic changes. As such, this component of the ADAPT-WAP project is dedicated to sensitization, communication and capacity building of actors. This component will have transversal activities oriented on the major issues and problems addressed and will concern the different target groups of the project. Apart from the traditional capacity building plans, a part of activities under this component are oriented towards the development of knowledge management strategy and a multi-stakeholder communication and awareness plan that will be used like tools by the managers and project management instances.

Funding from the Adaptation Fund will improve the awareness and capacity of policymakers, practitioners, and technicians in the domain of Climate Change Adaptation (CCA). These awareness and technical capacity-building activities will contribute to the creation of a robust information framework that integrates climate change adaptation aspects and vital for the ADAPT-WAP project implementation. As well, a part of the resources of the project will be used to identify the information, knowledge management and capacity building needs of the targets in order to develop a plan for capacity building and curricula tailored to the needs identified.

K. Project sustainability

The project, with its objective to strengthen the resilience of ecosystems and to improve the livelihoods of the populations of the WAP complex in relation with climate change, integrates elements of sustainability such as (1) the establishment of a Multi-Hazard Early Warning System (EWS) and (2) the implementation of concrete adaptation actions. The project will also strengthen, in the long term, the synergy between the three beneficiary countries to improve the sustainable and participatory management of the Complex's natural resources and to resolve conflicts between the different users.

The sustainability of the project results could be achieved by ensuring the integration of interventions and actions into existing institutions and systems at both the national and regional levels. The ADAPT-WAP project has insisted on the involvement of the main institutions concerned by the proposed actions during the project development process. These are essentially the technical services and institutions of the ministries in charge of the environment in the three beneficiary countries. The actions and activities of these services/institutions will be improved and supported within the framework of the project so that will be able to take over at the end of the project.

The sustainability of the project interventions has received particular attention during its development. Another element of sustainability is related to the population and ecosystem-based approach adopted by the project to strengthen their resilience. In this framework, the activities related to the development and implementation of adaptation action plans in collaboration with stakeholders and beneficiaries at the commune level will form the basis of sustainability in the implementation of project interventions.

The EWS, a key element of this project, will be carefully designed and executed to ensure the long-term sustainability of ongoing information production which will help reduce the negative impacts of natural disasters at the WAP complex level. Institutional sustainability will be ensured by integrating the EWS into existing and highly recognized governmental institutions and services as the CNSEE in Niger, SP / CONEDD or DGM in Burkina Faso and ABE in Benin and by strengthening the information sharing and circulation system for a better communication and valuation of data and information via dedicated networks. Given the importance of the EWS, the project investments will be integrated into the usual activities of the local and government institutions of all the countries involved through public funding.

These structures include a sufficient number of qualified personnel capable of supporting equipment, transmission/storage / data processing, and dissemination. Capacities will be strengthened at decentralized levels to facilitate the implementation of a standard alert use procedure. In addition, TORs will be elaborated to maintain the national EWS staff at their posts for five years to ensure knowledge transfer.

At the regional level, the project will work with regional institutions that are carried out similar activities as the AGRHYMET Regional Center, the ECOWAS, etc. These institutions will play an important role in the project implementation and will ensure the continuity of actions after the project end each according to its mandate at the regional level.

The project has been designed based on a bottom-up approach in which beneficiaries are expected to lead and adopt the project activities and interventions during and after project implementation. In order to strengthen the capacity of the communities and beneficiaries to do so, the third component of the project envisages the organization of training and capacity building sessions and study trips. Government should motivate and enable direct beneficiaries to participate in activities such as land protection through assisted regeneration and reforestation, corridor and pasture development, and

promotion of income-generating activities. The economic viability of these activities, particularly those aimed at the population, is highly dependent on their compatibility with the local systems and practices and the availability of resources. In addition, the creation of revolving funds for the management of micro-projects (a revolving system) will also contribute to the anchoring and sustainability of the project approaches.

The project sustainability will also be based on its institutional anchoring and its implementation arrangement, which aims to strengthen ownership of the project by the protected areas' management authorities selected by the three countries. The project will ensure the mobilization of financial resources for the implementation of all of the project components as well as those related to the three development and management plans mentioned above, which will contribute to the continuity of the process even after the project end, especially with the expected active participation of NGOs, the population and the actors.

L. Environmental and social impacts and risks

Like any project that involves activities with strong interactions with ecosystems and the population, ADAPT-WAP project could have environmental and social impacts. it is important to identify at this stage, the possible negative impacts in order to foresee the necessary mitigating measures. The table below sums up the impacts/risks evaluation against the AF Environmental and social principles.

Appropriate mitigation measures for each identified impact / risk are detailed in section C part III.

Checklist of environmental and social principles	**No additional assessment is required for conformity**	**Potential impacts and risks - additional assessment and management required for the conformity**
Conformity with the law	X (*compliance with the national laws is supported by the delivery of conformity certificates by the three national authorities in charge of environmental and social issues*)	
Access and Equity	X	
Marginalized and vulnerable groups		X *(Gender Analysis study has been conducted during the preparation of the Full Proposal)*
Human rights	X	
Gender Equity and Women's empowerment		X *(Gender Analysis study has been conducted during the preparation of the Full Proposal)*
Fundamental rights of work	X	
Indigenous Peoples		X *(Gender Analysis study has been conducted during the preparation of the Full Proposal)*
Involuntary Resettlement	X	
Protection of natural habitats		X
Biodiversity conservation		X
Climate change	X *(Climate Change vulnerability study has been conducted during the preparation of the Full Proposal)*	
Pollution prevention and resource efficiency		X
Public health		X
Physical and Cultural Heritage		X
Soil and land conservation		X

P1- Conformity with the law

The ADAPT-WAP project proposal has been developed in alignment with a number of national and regional priorities, policies, plans, and national technical standards for sustainable development and adaptation to climate change. It will also take into account the international and national standards related to biodiversity, land conservation, water resources, ecosystem management and poverty alleviation.
As regards to the Environmental and Social Assessment, and following discussions during the several concentration workshops the national executing entities have submitted the ESIA to their national authorities for review and approval. This process has led to the delivery of conformity certificates by the three national authorities in charge of environmental and social issues.
At this stage of full proposal development some activities/ sub-projects are still unidentified and so are their impacts, therefore the risk screening procedure that will be applied should take into consideration the conformity of these activities with the law.

P2- Access and Equity
The project will provide fair and equitable access to benefits; clean water, sustainable livelihoods, solar energy, revolving fund, updated and accurate alert messages and effective knowledge.
Although each household or individual in the project area has equal opportunities/access to the project interventions, priority setting will be made by the communes and according to the adaptation and development action plans. In addition, the several activities to be implemented will be conducted in an inclusive and participatory manner. This will provide fair and equitable access to project benefits for all participants, including marginalized and vulnerable groups, who meet the eligibility criteria.
Under Component 3
and during the implementation of socioeconomic activities to enhance communities' livelihoods, local authorities at each of the project sites and in the beneficiary communes will ensure that sub-project activities will be equitable. Sensitization sessions on the approach of prioritizing project support to the most vulnerable groups will be ensured. This will mitigate any inter-community conflicts that might arise as a result of focusing on the most vulnerable areas. In addition, OSS, as a regional implementing entity and in accordance with its practices, makes available to all direct and indirect beneficiaries of the project a grievance mechanism that will inform about conflict situations and will ensure access and equity.

P3- Marginalized and vulnerable groups
The project will provide opportunities for strengthening the resilience of indigenous peoples, including vulnerable groups, ethnic groups and socio-cultural groups that live in the proposed project area. They will be encouraged to participate in the decision-making process for the development of activities at the local and communal level, as well as to improve their livelihoods and income.
The gender study already developed has identified the main socio-composition of the targeted area. This was a first step regarding the assessment of the marginalized and vulnerable groups that could be impacted by the project activities. In addition during the several concertation workshops, representatives from the several target groups were invited to take part in the design of some activities for a better ownership.
During the first steps of project implementation, additional assessment (gender, land right, etc.) will be carried, to avoid exclusion of marginalized groups and to minimize potential impacts related to the project activities.

P4- Human rights
None of the project's activity is identified without respecting international human rights. The objectives of the project aim at promoting fundamental human rights for equitable access to services, water for irrigated agriculture, capacity building, and information.
The project will respect the human rights of all actors and local population in accordance with its objectives and scope.
Moreover, and particularly for this project, the regional approach will provide an adequate framework to ensure respect for human rights at the level of each country. The proposed project will promote the basic human rights of access to food, water, and information.

P5- Gender Equity and Women's empowerment
During project design, a gender assessment study was conducted as a preparatory step to elaborate project proposal. In fact, gender mainstreaming in project activities aims at analyzing gender (male/female) and youth (boys and girls) relationships as well as influencing factors that limit the full development of all women and men. Gender equity is a prerequisite in the implementation of concrete adaptation actions, development of infrastructure for IGAs and is very important at the level of communication, training, and awareness raising actions to be undertaken within the framework of the project.
In addition project activities aim to promote fair and equal development between men and women. During the project consultation and formulation process, the gender-based analysis conducted, provided specific areas of activity to be addressed. These have been incorporated into design interventions and should enable women and youth to benefit from specific activities that will contribute to improving their income and living conditions. As an example of specific women's activities fishing, processing of fish products, distillation, and handcraft are

dedicated to women groups with capacity building sessions to ensure the sustainability of the promoted activities and their ownership by women.
It is likely that the current stage of the project proposal development does not provide a comprehensive overview of the expected impacts of the project on the gender aspect, despite the study conducted. Thus, it is planned to carry out an update and a specific analysis of the gender aspect for the unidentified sub-projects taking into consideration countries and sites specificities.

P6- Fundamental rights of work
As a global framework related to the fundamental rights of work, the three project's beneficiary countries have ratified the eight ILO Conventions. During the project design stage were involved the national and regional stakeholders and the core labor rights have been highlighted. As a result compliance with fundamental rights of work will be ensured in all the proposed project activities and especially the community-based ones. In fact, the component 3 that encompasses the implementation of concrete adaptation actions, where community members will provide the work, core labor rights compliance will be mandatory.
Operationally, it is intended to establish contacts with representatives of the local communities responsible for carrying out some activities, where their mandate and their rights will be clearly explained.
During the works execution, the national executing agencies will be in charge of the follow-up and monitoring of the worksites including activities progress and the respect of the labor and safety rights of workers. However, it is likely that accidents during the project on the ground activities execution could occur.

P7- Indigenous Peoples
As previously mentioned with regards to project impacts on marginalized and vulnerable groups, the preliminary assessment has allowed the identification of different tribes in the local communities. However, starting from project first steps till now there was no distinction between the tribes when developing the project's activities. I addition while the project is in line with the international, regional, national conventions and standards it will aim to protect indigenous people rights and prevent them from the occurrence of project's negative impacts. The three beneficiary countries Benin, Burkina Faso and Niger voted in favor of the United Nations Declaration on the Rights of Indigenous Peoples.
It should also be noted that the objectives of the project include the protection of transhumance corridors used by indigenous peoples around the WAP Complex and in a cross-border manner. Thus to achieve the project outcomes it is mandatory to involve the indigenous groups at different levels of project's activities.
However, there is a (medium) risk that traditional use of natural resources and tenure will be undermined.
Therefore, a detailed analysis of these rights, especially water and forest resources, should be undertaken in the initial phase of the project.

P8- Involuntary resettlement
The ADAPT-WAP project does not include any community voluntary or involuntary resettlement activities. In addition, the main activities under the project will be executed in the buffer zone and do not integrate heavy interventions that require the displacement of populations even temporary. In addition, some activities that are unidentified will be screened more in detail during project implementation. The review process for unidentified sub-projects will include criteria that stipulate no resettlement.

P9- Protection of natural habitats / P10- Biodiversity conservation:
The protection of ecosystems, their natural habitats, and biological diversity is an essential objective of components 1, 2, 3 and 4 of the project.
Nevertheless, as part of the implementation of some activity, the work of releasing rights of way from the targeted sites will significantly affect the flora and fauna as well as the natural habitats. These are mainly tree cutting and loss of bird habitat and wildlife, which represents a major form of disturbance.
As a mitigation measure, the project plans to carry out a follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats. With regard to tree removal, compensatory reforestation will be executed in the project area at his end. Regarding wildlife, all forms of disturbance of wildlife habitat will be kept to a minimum by avoiding critical periods to conduct activities (migration, reproduction).

P11- Climate change
Climate Change vulnerability study has been conducted during the preparation of the Full Proposal. According to this study, the adverse effects of climate change are being felt moderately both on the natural ecosystems and on the livelihoods of communities along the WAP complex.
None of the proposed project activities has been identified as potential source of, or cause unjustified greenhouse gases. On the contrary, the ADAPT-WAP Project is dedicated to the mainstreaming of climate change into technical management documents of the WAP complex (MDP and DMP) in addition to the adaptation plan of the WAP and the development plans of the riparian communes.

Thereby, through its component 3, the project aims to increase the adaptive capacity of the local population and the resilience of ecosystems to climate change adverse effects. Activities will focus on i) improving infrastructures for farmers, fishermen, and pastoralists, ii) ensuring sustainable management of silvopastoral and aquaculture, iii) promoting renewable energies and iv) the establishing a revolving fund.
Additionally, the project will also contribute to reduce greenhouse gas emissions through its component 1 focused on integrating of climate change aspects and of the Emergency Plan (MREWS) in the management tools of the WAP complex, component 2 dedicated to establishing of early warning system, and component 4 devoted to information and stakeholder's capacity building on climate change.

P12- Pollution prevention and resource efficiency
ADAPT-WAP project proposal has not been identified as huge energy demanding or big consumers of natural resources and therefore would require measures for their efficient use. On the contrary, some activities are oriented towards the better use of available resources, especially water.
However, some sub-projects including the installation of EWS equipment (Activity 2.1.2.1), the transhumance corridors construction (Activity 3.1.1.3), the building of watering places and grazing areas at the existing water points (Activity 3.1.2.4), the installation of small irrigation equipment (Activity 3.1.4.4) will generate waste materials including cleared vegetation, topsoil and affect the integrity and tranquility of terrestrial wildlife. There is a potential risk of surface and groundwater contamination from release or spills of fuel and lubricants during fueling and maintenance of construction equipment.
To mitigate these risks, the sub-projects with a potential risk will only be implemented after impact studies as well as obtaining authorization from incumbent state entities, and under their supervision - according to national standards - including regarding pollution control.

P13- Public health
The project will not have a negative impact on public health. On the contrary, it will contribute to improving the sanitary conditions of communities by monitoring ecosystems, water, and soil quality. The project plans hence the construction and/or rehabilitation of 21 water points in the WAP complex. Enhancing water distribution and quality, in particular, is crucial to improve public health and decrease water-related diseases such as Malaria and other diseases spread by insects and prevents death. Easy access to safe water will also help improve the lives of those living with HIV or AIDS that are more prone to common illnesses and diseases, especially diarrhea. The locations of priority water points are considered as unidentified sub-project activity. Therefore, it is planned, under component 3, to conduct technical studies for water point development and organize consultation workshops to validate the locations of priority water points.

Besides, the establishment of EWS in addition to the elaboration of commune development plans will also enable communities to manage natural disasters and improve their incomes to access health facilities, etc.

P14- Physical and Cultural Heritage
The project will have no activity related to the destruction of physical and cultural heritage. Their protection/conservation will rather be encouraged by the project. Nevertheless, it is not excluded that some unidentified subprojects activity could have an effect on physical and cultural heritage.

P15 -Soil and land conservation
The ADAPT-WAP project proposal plans to promote the restoration and rehabilitation of degraded lands. Component 3, in particular, encompasses terracing and reforestation activities. Besides, livelihood diversification through the promotion of several IGA will help reduce farmers' pressure on forest soils. Eventually, carbon sinks for the sequestration of GHG induced by project activities will be increased.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Project management arrangements

Implementing Entity

The ADAPT-WAP project will be implemented by the Sahara and Sahel Observatory (OSS), in its capacity as the Regional Implementing Entity for the Adaptation Fund (AF). OSS will provide guidance, ensure financial monitoring and reporting to the AF. As an intergovernmental organization, the three targeted countries are part of the OSS member countries this gives significant experience and knowledge of issues as well as it will facilitate regular contact with the executing entities.

The total cost of the project is developed in this full proposal to meet the different activities to be executed over four years. At the final stage of the project proposal preparation, a revised budget amount is fixed to US$ 10,632,450 including execution fees. The financial needs were determined based on activities recommended and validated through a concertation process. This process mainly consisted of the organization of national and regional workshops during February and March 2018, to pool expectations and recommendations from stakeholders.

Executing Entities

At the regional level

The four (04) year project will be executed by a **Regional Management Unit (RMU)** hosted by the OSS. Its composition will comply with the policies, procedures and terms & conditions of the AF and OSS.

At the national level

There will be three **National Management Units (NMU)** mandated in consultation with the Ministries in charge of Environment of each beneficiary country.

In **Benin**, the project will be executed by the National Centre of Management of Fauna Reserves (CENAGREF), its mission will include both targeted areas of W-Benin and Pendjari parks. In **Burkina Faso**, the project will be executed by the General Directorate of Water and Forests (DGEF) for the W national park and by National Office of Protected Areas (OFINAP) for the Arly Park. In **Niger**, the execution will also be undertaken by the DGEF for the W national park.

At the local level

The project will be executed by involving local beneficiary populations. To achieve this participatory approach, groups of women, youth, and men, peasant specialized organizations will be identified at the level of each community of intervention. These various stakeholders will benefit from training sessions aimed at strengthening their capacities which will ensure the sustainability of the project's results.

Three types of bodies will be set to ensure the coordination and execution of the project at the regional and national levels defined as follows:

1- A **Regional Steering Committee (RSC)** will be composed by the Technical Monitoring Committee (TMC), which brings together the general directors in charge of the protected areas of the ministries in charge of protected areas, representatives from decentralized administrations of the WAP complex, representatives of local communities, representatives of grassroots community organizations, private-sector operators, technical and financial partners, projects and other stakeholders who may contribute to the management and funding of the WAP Complex.

The RSC members meet twice a year in ordinary sessions and whenever necessary in extraordinary session. It is chaired on a rotating basis by one of the General Directors of the administrations in charge of protected areas.

The RSC will ensure the following services:

- Provide guidance for an effective project management;
- Approve the planning and annual budget allocation;
- Periodically evaluate the degree to which project results meet forecasts;
- Ensure that the recommendations resulting from the different support and supervision missions are implemented;
- Approve the project activity reports and budget revisions;
- Ensure the participation and support of all target groups (vulnerable social groups, public and private sectors, NGOs, parks managers, riverside populations);
- Coordinate interventions by governments and non-governmental organizations and mediate co-management arrangements, potential conflicts, and multi-sectoral issues;
- Build consensus on critical aspects of the development and conservation of the WAP protected area complex.

2- A **Regional Management Unit (RMU)** will coordinate the project activities. The unit will be hosted by the OSS and will be composed by:

Technical actor	***Role***
01 Regional Environmental Coordinator with expertise in Climate Change	Ensure day-to-day management of the project, supervise project team members, review execution of tasks and provide guidance and feedback
01 Assistant in charge of the monitoring-evaluation of the Project activities	Ensure that project activities are monitored effectively in terms of achievement of goals by compiling and analyzing data according to the project M&E plan
01 Technical assistant specialized in Rural Engineering / Agronomy	Provide technical support and input to project planned activities
01 Finance and administration manager	Oversee the project's financial operations and reporting and conduct administrative tasks as well as ensure timely communication with

The Regional Management Unit will work closely with the national management units to achieve the project approved activities and will have the following key services:

- Oversee and coordinate the production of project outputs in accordance with the terms of the approved project document;
- Engage all inputs in accordance with OSS and AF procedures;
- Oversee and coordinate the work of the National Management Units (NMUs) and project subcontractors;
- Coordinate the recruitment and selection of the project staff if needed;
- Prepare and review project work and financial plans as required by the OSS and AF;
- Oversee and ensure timely submission of compiled Reports, Combined Project Implementation Review / Annual Project Report, Technical Reports, quarterly financial reports, and other reports requested by the OSS and AF;
- Prepare and spread the Project's communication materials and respond to the requests of the stakeholders involved;
- Ensure progress reporting to the Regional Steering Committee and ensure the implementation of the guidelines resulting from SC meeting sessions.
- Oversee exchange and sharing of experiences and lessons learned.

3- National Management Units (NMU): At the country level, a simple project management structure will be set and will be responsible for project execution.

More specifically, each NMU will:

- Coordinate and ensure the execution of field activities at the project intervention sites;

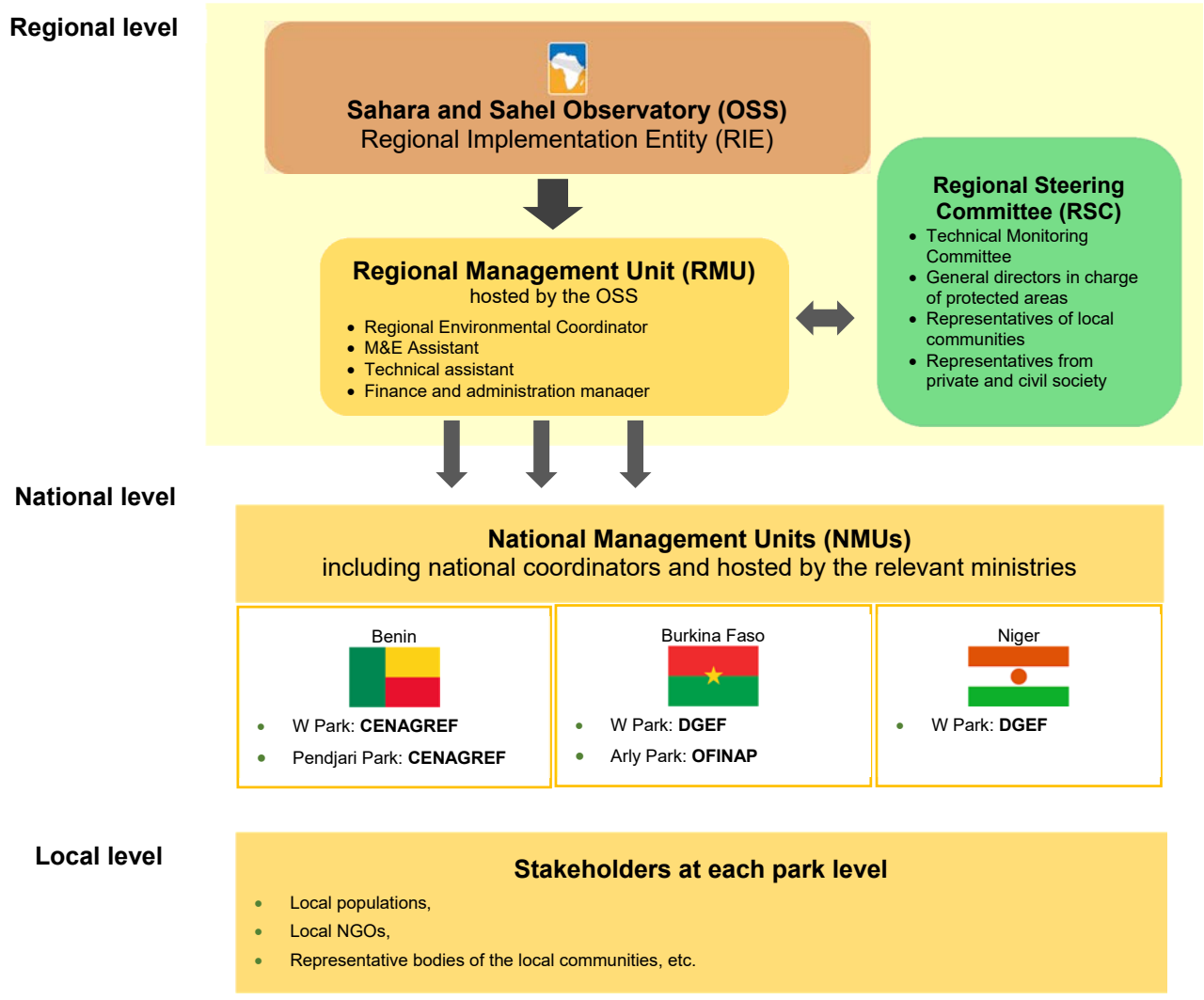
- Ensure compliance with the OSS and AF rules and pursuant to the project grant agreement;
- Facilitate communication and networking among key stakeholders in each country,
- Organize meetings and regional coordination missions,
- Provide support to local stakeholders to achieve the project objectives.

Each NMU will be composed as follows: 01 National Coordinator, 01 M&E Responsible, and 01 Accountant.

The coordinator of this national management unit will be responsible for the administrative and technical coordination of the project and its progress on the basis of feedback received from the regional coordination hosted by OSS and the supervisory protected areas management authority.

The NMU will be directly appointed or hired through calls for applications. The selective process must involve both the body in charge of managing the protected areas and the OSS.

The organizational structure for the project governance and implementation is illustrated in the Figure below.



Other competent institutions working in the field of environment and climate change could be associated to strengthen the project implementation and consolidate its activities and approaches with a view to improving population's and natural resources' resilience.

Benin's National Fund for the Environment and Climate (le Fonds National pour l'Environnement et le Climat (FNEC) is a public institution in charge of, among others:

- Mobilize State subsidies, taxes and fines of environmental pollution as well as other national resources;
- mobilize external resources for the protection and effective management of the environment and for combating the adverse effects of climate change, including those related to the financial mechanisms of international environmental and climate agreements on the environment and climate;
- Support programs and projects aimed at the protection of the environment, the fight against the negative effects of climate change and the improvement populations' living conditions;
- Monitor and evaluate the implementation of the funded projects and their impacts on the environment and population;
- Strengthen and develop the institutional and operational capacities of national partners in terms of environmental management and in combating the adverse effects of climate change;
- promote sustainable natural resource management practices

Through its missions, the FNEC can provide support to the project through the monitoring of its activities especially those related to the populations have benefited from micro-projects and income-generating activities (AGRs). FNEC could also support and provide grants/credit for other vulnerable groups to increase their adaptive capacity to climate change.

The Niger Agricultural Bank (Banque Agricole du Niger), which has developed a strategy based on the development of innovative financial mechanism (as financing shared cost) has also expressed its will to collaborate with the project, mainly by supporting of the income-generating activities, namely: small-scale irrigation, fishery, livestock, etc.

At the project beginning, discussions will be conducted with these two institutions and the project national partners to agree on the scope of this potential collaboration and the modalities for its concretization.

B. Financial and risk management measures

The ADAPT-WAP, as a regional project involving three different countries, could present both financial and project management risks during its implementation. In order to overcome these challenges, management measures are considered. Anticipated project risks are summarised by country in the table below:

Type of risks	*Identified Risks*	*Level* *High /Medium /Low*	*Risk Management Measures*
Financial	Heavy financial implementation procedure due to the geographical remoteness of the regional project coordination unit	***Medium***	Define and implement a quarterly funding mechanism for on-site project activities to support national local execution units.
	Conflicting interests among different stakeholders regarding access to and use of water and other natural resources	***Medium***	Organize consultation workshops for the validation of the various documents and products planned by the project activities

Type of risks	Identified Risks	Level (High /Medium /Low)	Risk Management Measures
	Delay in project execution due to government bureaucracy and lengthy and inefficient procurement processes	Low	Plan properly (including developing a procurement plan)
			Negotiate with governments for the support that can facilitate implementation/execution.
	Lack of eligible project financial management	***Medium***	The project will have a clear separation of roles and will strengthen accountability and audit.
Project	Iniquity of project resources distribution	***Medium***	Follow a transparent and participatory process in selecting project beneficiaries using certain pre-agreed criteria. For example the definition of criteria and processes for selecting the beneficiaries who will be eligible for the revolving fund.
	Strong sectoral bias between different stakeholders	Low	Full participation of all stakeholders in the execution of the project
	Inadequate baseline/resource data potential,	***Medium***	Establish a baseline situation before/during implementation/execution. Efforts will be undertaken to acquire the appropriate data
	Low rate of technology uptake by communities,	Low	Promotion, demonstration, and training on new technologies and practices and training
	Politicization in the choice of target beneficiaries at the riverside communities level	***Medium***	Increase awareness among local actors and communities, work with available local structures and ensure active participation of community organizations in project execution,
	Participation and willingness to promote project initiatives by local communities is limited,	Low	Increase awareness at the local community level, work with available local bodies, ensure the active participation of community organizations in the execution of the project,
Institutional	Incompatibility between the complex and the administrative boundaries	Low	Promote management and development adapted to the complex. Involvement of local authorities could help to overcome the border issues
	Lack of collaboration between relevant technical institutions	Medium	Relevant institutions should be involved from the project design stage and should continue to participate in planning, execution, project review and reporting.
	Low political will for regional collaboration to establish a regional EWS	Low	The project will promote collaboration between the different decision-makers involved
	Lack of ownership of the project outcomes by the beneficiary institutions	Low	The robust project management structure encourages transparency and stakeholder participation in project implementation preparation, reporting/communication, monitoring, and evaluation. This will create ownership and monitoring of project interventions.

C. Environmental and social risk management measures in line with the Environmental and Social Policy of the Adaptation Fund[8]

During the development of the Project full proposal a first and global environmental and social impacts and risks assessment has been developed according to the national standards (the three beneficiary countries). The table below describes potential impacts and risks related to the proposed project in accordance with the Environmental and Social Principles of the AF.

[8] *E&S Management Plan is detailed within the ESIA in compliance with AF PES (Summary annexed to the present document)*

Checklist of environmental and social principles	Potential impacts and risks	Mitigation measures
Conformity with the law	Unidentified activities or projects may require a specific EIA to comply with national standards and laws.	- Risk screening of unidentified activities - E&S assessment - Obtaining certificates of conformity
Access and Equity	Project beneficiaries will be in general rural people (pastoralists and smallholder farmers) who have difficulties to access to the decision-making process, this may limit their opportunities to benefit from projects outcomes.	- Concertation workshops - Priority setting criteria - Sensitization session on the prioritization of project activities to the most vulnerable groups - Grievance mechanism
Marginalized and vulnerable groups	Possibility to exacerbate the vulnerability of the marginalized groups and risk of limited access to project activities	- Concertation workshops - Priority setting criteria - Sensitization session on the prioritization of project activities to the most vulnerable groups - Grievance mechanism
Human rights	Very low impact	- Grievance mechanism
Gender Equity and Women's empowerment	Risk of unfair access to the project activities (capacity building, IGAs, revolving fund, etc.)	- Sensitization session on the gender equity during concertation workshops - National Project Management Units will encompass at least a woman who will participate in workshops where gender issues are important. - Grievance mechanism
Fundamental rights of work	Risk of accidents during on the ground activities execution	- Sensitize workers and populations to the risks related to the undertaken activities - Provide adequate equipment for security for workers
Indigenous Peoples	Risk of conflicts between pastoralists and smallholder farmers Traditional use of natural resources and tenure will be undermined	- Detailed analysis and mapping of communities and indigenous people will be conducted during the identification of project intervention sites. - Concertation sessions between pastoralists and smallholder farmers to avoid/manage possible conflict
Involuntary Resettlement	Low risk of loss of assets or access to assets that leads to loss of income sources or other means of livelihood	- The review process for unidentified sub-projects will include criteria that stipulate no resettlements
Protection of natural habitats	The work of releasing rights of way from the targeted sites will significantly affect the flora and fauna as well as the natural habitats. The presence of labor and construction equipment, if this is necessary for carrying out the works or activities planned by the project, could have a significant impact on the fauna and flora of certain intervention sites.	- Follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats - Compensatory reforestation will be executed in the project area - All forms of disturbance of wildlife habitat will be kept to a minimum by avoiding critical periods to conduct activities (migration, reproduction)
Biodiversity conservation	The work of releasing rights of way from the targeted sites will significantly affect the flora and fauna as well as the natural habitats. The presence of labor and construction equipment, if this is necessary for carrying out the works or activities planned by the project, could have a significant impact on the fauna and flora of certain intervention sites.	- Follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats - Compensatory reforestation will be executed in the project area - All forms of disturbance of wildlife habitat will be kept to a minimum by avoiding critical periods to conduct activities (migration, reproduction)
Climate change	No risk	*Project activities where tree cutting is necessary to release the right of way of some interventions will be balanced by reforestation actions.* *As the project includes important reforestation actions (150 Ha/country/year)*
Pollution prevention and resource efficiency	There is a potential risk of surface and groundwater contamination from release or spills of fuel and lubricants during fueling and maintenance of construction equipment	- Impact studies for the sub-projects - Authorization from incumbent state entities,

	Generation of waste related to the presence of the workers, construction engines, and equipment, etc. during the execution of the project's different activities Pollution caused by waste from the use of multifunctional platforms	- Supervision/follow-up according to national standards including pollution control - Waste management plans for construction sites - Promote good waste management practices related to the use of multifunctional platforms
Public health	Water-related diseases (such as Malaria) may increase in frequency with the construction of water points. The presence of workers at construction sites near the project beneficiary villages could increase the risk of spread of sexually transmitted diseases	- Sensitization sessions for the benefit of populations and workers on the risk of Water-related diseases and STD.
Physical and Cultural Heritage	Possibility of physical heritage damage related to unidentified sub-projects.	- Participatory workshops to identify areas of physical and cultural significance to prevent negative sub-projects impacts
Soil and land conservation	Low risk - There is a minimal risk associated with the development of transhumance pathways, which could become irreversible.	*This activity is essential to achieve one the project objective which is the preservation of the WAP complex Natural resources by avoiding overgrazing and access to hotspots.*

The AF's Environmental and Social Policy classifies projects in three categories : A, B and C ; with i) Category A referring to projects that are "likely to have significant adverse environmental or social impacts" ; ii) Category B referring to projects whose impacts are "less adverse than Category A projects, site- specific, few if existing are irreversible and, in most cases, reversible or easily mitigated" and Category C corresponding to projects "with no adverse environmental or social impacts".

According to the table (Section L Part II) on the Environmental and Social risk screening and the above table on Environmental and social risk management measures, ADAPT-WAP project proposal, although providing for field activities, does not admit irreversible risks and most of the interventions will be easily mitigated. Therefore, the proposed project is classified as a Category B project.

The Project Environmental and Social Management Plan will be implemented by OSS as RIE and executed by PMU at a national and local level. The project teams shall collaborate to ensure that the appropriate risk mitigation actions are well undertaken.

Environmental and social impact assessments and risk management for unidentified sub-projects

At the Full proposal Stage some of the activities especially under component 3 are still unidentified. Given this, additional environmental and social impact assessment for each sub-project will be required. The screening system will ensure that each sub-project adheres to the environmental and social principles of the AF and of the OSS E&S Policy.

The PMU at national and local levels will be in charge of ensuring the necessary environmental and social impact assessments for each of the sub-projects. In addition and where the impacts and risks are important, without the approval of the relevant national authorities no sub-project or activity will be carried out. Furthermore, assessed sub-projects that may present significant environmental and social risks will not be implemented unless a comprehensive risk management plan is developed.

Each sub-project Environmental and Social Impact Assessment (ESIA) will be carried out to identify and predict impacts. The process will in compliance with national standards and OSS Policy and will include the following steps:

i) impact screening;

ii) scoping;
iii) prediction and mitigation;
iv) management and monitoring; and
v) evaluation.

After conducting the ESIA, a detailed ESMP will be developed in each sub-project site and will include a mitigation plans, monitoring plans; institutional arrangements; with capacity building; and associated costs.

Environmental and Social Safeguard (OSS)

Environmental and Social Safeguard of ADAPT-WAP project is ensured through OSS policies and procedures which are based on the International Finance Corporation (IFC) Environmental and Social sustainability Framework. This ensures that potential risks and impacts are iteratively identified, mitigated and monitored throughout the life-cycle of the Project. The Environment and Social risk management is completed through two main stages:

1. Preliminary Risk Screening with respect to the ten Performance Standards (PS) prescribed in OSS E&S policy that all projects should comply with. This phase is implemented during project preparation and leads to a categorization of the project according to its risk level.

2. On-going Risk Screening of the project interventions during the implementation phase. Activity-wise risk management is governed by OSS' risk management procedure which is in line with the internationally recognized standards, and more specifically the ISO 31000:2009, Risk management — Principles and guidelines.

Preliminary Screening

In compliance with OSS Environmental and Social policy, a preliminary risk screening was conducted from the earliest stages of ADAPT-WAP project preparation. Pre-screening of the concept note and early drafts of the project document using *OSS' procedure for risk and project categorization (checklist provided below)* helped to ensure that social and environmental sustainability issues are considered and integrated into the project' design.

Ongoing Screening

In addition to the preliminary and overall risk screening conducted at the preparation phase, operational procedures will be implemented to ensure a continuous screening of all project activities and interventions for the identification of arising risks and impacts. If these impacts or risks are determined significant, activity-wise environmental and social assessment will be conducted which, in turn, will lead to the identification of activity' specific environmental and social management measures that need to be incorporated into the project. Identification, treatment and monitoring of identified risk and mitigation measures for ADAPT-WAP project will be managed using a Risk Register. The process will be governed by the *Risk Management Procedure of OSS.*

Monitoring of mitigation measures

Corrective actions identified to manage activities with significant Environmental and social impact will be monitored using operational rules set out in the monitoring and review procedure of OSS. In this respect, OSS will monitor and review the implementation of corrective action plans which range from simple mitigation measures to detailed management plans with actions that can be measured quantitatively or qualitatively.

Checklist for preliminary risk screening and project categorization

Project description	
Project name	
Location	
Sector	
Brief project description	

Checklist Potential Social and Environmental Risks	Answer (Yes/No)
PS 1: Assessment and management of environmental and social risks and impacts	
Please refer to the sections below	
PS2: Labour and working conditions	
Does the project/programme pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project/programme construction, operation, or decommissioning?	
Does the project/programme involve support for employment or livelihoods that may fail to comply with national and international labor standards?	
Does the project/programme engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	
PS 3: Resource efficiency and pollution prevention	
Would the project/programme potentially result in the release of pollutants to the environment with the potential for adverse local, regional, and/or transboundary impacts?	
Would the proposed project/programme potentially result in the generation of waste (both hazardous and non-hazardous)?	
Will the proposed project/programme potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials?	
Does the project/programme propose use of chemicals or materials subject to international bans or phase-outs?	
Will the proposed project/programme involve the application of pesticides that may have a negative effect on the environment or human health?	
Does the project/programme include activities that require significant consumption of raw materials, energy, and/or water?	
PS 4: Community health, safety and security	
Would elements of project/programme construction, operation, or decommissioning pose potential safety risks to local communities?	
Would the project/programme pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	
Does the project/programme involve large-scale infrastructure development (e.g. dams, roads, buildings)?	
Would failure of structural elements of the project/programme pose risks to communities? (e.g. collapse of buildings or infrastructure)	
Would the proposed project/programme be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	
Would the project/programme result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	
PS 5: Land acquisition and involuntary resettlement	
Would the project/programme potentially involve temporary or permanent and full or partial physical displacement?	
Would the project/programme possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	
Is there a risk that the project/programme would lead to forced evictions?	
Would the proposed project/programme possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	
PS 6: Biodiversity conservation and sustainable management of living natural resources	
Would the project/programme potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes	

Are any project/programme activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	
Does the project/programme involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods?	
Would project/programme activities pose risks to endangered species?	
Would the project/programme pose a risk of introducing invasive alien species?	
Does the project/programme involve harvesting of natural forests, plantation development, or reforestation?	
Does the project/programme involve the production and/or harvesting of fish populations or other aquatic species?	
Does the project/programme involve significant extraction, diversion or containment of surface or ground water? For example, construction of dams, reservoirs, river basin developments, groundwater extraction	
Does the project/programme involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	
Would the project/programme generate potential adverse trans boundary or global environmental concerns?	
Would the Project result in secondary or consequential development activities, which could lead to adverse social and environmental effects, or would generate cumulative impacts with other known existing or planned activities in the area?	
PS 7: Indigenous people	
Are indigenous peoples present in the project/programme area (including project/programme area of influence)?	
Is it likely that the project/programme or portions of the project/programme will be located on lands and territories claimed by indigenous peoples?	
Would the proposed project/programme potentially affect the rights, lands and territories of indigenous peoples (regardless of whether Indigenous Peoples possess the legal titles to such areas)?	
Does the proposed project/programme involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	
Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	
Would the project/programme adversely affect the development priorities of indigenous peoples as defined by them?	
Would the project/programme potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?	
Would the project/programme potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	
PS 8: Cultural heritage	
Will the proposed project/programme result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	
Does the project/programme propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	
PS 9: Gender equity and Women's empowerment	
Is there a likelihood that the proposed project/programme would have adverse impacts on gender equality and/or the situation of women and girls?	
Would the project/programme potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	
Have women's groups/leaders raised gender equality concerns regarding the project/programme during the stakeholder engagement process and has this been included in the overall project/programme proposal and in the risk assessment?	
Would the project/programme potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?	
PS 10: Access and equity and protection of human rights	

Could the project/programme lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	
Is there a likelihood that the project/programme would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups?	
Could the project/programme potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	
Is there a likelihood that the project/programme would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	
Are there measures or mechanisms in place to respond to local community grievances?	
Is there a risk that duty-bearers do not have the capacity to meet their obligations in the project/programme?	
Is there a risk that rights-holders do not have the capacity to claim their rights?	
Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	
Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	

Institutional arrangements for ESIA

Project Management Unit (PMU)

The regional monitoring of the project activities will be carried out by the PMU hosted by OSS. This Unit will be responsible for the supervision of the National Project Units activities related to monitoring the ESMP at local level. On a quarterly basis the PMU will gather the reports from the National Project Units, who will rely on a bottom up feedback system based also on community inputs. In order to ensure a relevant monitoring regular field visits to inspect and verify on the one hand the efficiency of the mitigation measures and on the other hand to check the extent of the foreseen impacts.

A yearly monitoring report will be developed and submitted to OSS as a RIE.

Project National Unit (PNU)

The PNU will be responsible for coordinating and monitoring environmental and social indicators. The PNU will be also in charge of analyzing data, managing local information systems and supervising the baseline establishment at project starting phase. As regards to the unidentified sub-projects the PNU will be responsible for conducting the ESIA according to the national standards and laws and will then work closely with local authorities to develop the relevant ESMPs for each intervention sites. Finally the PNU will prepare quarterly based reports and submit them to the PMU.

Local Communities

The ESIA monitoring will also include a community-based component. In fact, the project plans to carry out training and capacity building sessions for the benefit of local agents and communities, in data collection and monitoring.

Grievance Mechanism

Scope of ADAPT-WAP Grievance Mechanism

Potential impacts on communities in the three targeted countries are identified and evaluated within the Social and Environmental Assessment annexed to the project proposal. Based on the results of this assessment, Regional and National Management Units (RMU and NMUs) will develop an appropriate social and environmental management system and will include appropriate steps in their action plans.

In addition, Management Units will put in place procedures to handle issues that may rise throughout the project lifecycle and which could not be anticipated during the assessment process.
The Management Units will collaborate for the establishment of a project specific Grievance Mechanism to address affected communities' concerns and complaints about the ADAPT-WAP environmental and social performance.
The proposed project will essentially be guided by the OSS grievance mechanism that aims at providing persons affected by adverse environmental or social impacts resulting from OSS projects or programs with an accessible, transparent, fair and effective process for the submission and processing of their complaints (http://www.oss-online.org/en/grievance-mechanism).
OSS mechanism is in line with the principles for non-judicial grievance mechanism. OSS has developed a complaints' form that will be filled and the grievance handled accordingly. Furthermore, during initial implementation phase, the project will conduct an analysis of the various structures, identifying gaps and resources (human, administrative, financial technical capacity, etc.) needed for the effective feedback and grievance redress mechanism that is to be established within the project. The project will establish a feedback and grievance redress mechanism that will help to diffuse conflicts arising from project implementation.
The Grievance Mechanism will become an integral part of the project management system and will be considered through all stages of the project cycle. It will be based on a clear and transparent process that is culturally appropriate and easily accessible to all segments of the affected communities.

Aim of the Grievance Mechanism

The ADAPT-WAP Grievance Mechanism aims to provide a comprehensive framework for independent review of complaints from affected individuals or organizations concerning Environmental, Social or Gender harms caused, or likely to be caused, by ADAPT-WAP project. This mechanism will ensure that simple and practical procedures for complaints are properly recorded, responded to, and reported, and allow for effective handling of unresolved issues. The process will also enable awareness and accessibility to grievance redress in a way that is consistent with the scope of the project.
In addition, the ADAPT-WAP Grievance Mechanism will contribute to:

- achieve effective stakeholder engagement, based on active participation of and feedback from groups affected by the project inventions,
- evaluate the performance of the Social and Environmental Management System and strengthen the project operations by informing the Management Units about necessary improvements.

Complaints Management Process

In order to operationalize the Grievance Mechanism and make it accessible to all project stakeholders, a clear and concise step wise Complaints Management Process (CMP) will be considered.

The ADAPT-WAP' CMP is governed by the Environmental and Social policy and the External Communication procedure of OSS which set out how a complaint should be filled and how it will be processed. The External Communication procedure also describes requirements relating to timelines, reporting, disclosure of and access to information and other issues relevant to the administration of the project' Grievance Mechanism.

Handling grievances under the ADAPT-WAP project will follow a step-by-step process as described in the External Communication procedure of OSS. The main steps of the process are as follows:

1) Receiving complaints
2) Categorizing and registering of complaints
3) Reviewing and Investigating complaints
4) Developing resolution options and preparing decisions
5) Publishing and monitoring decisions

D. Monitoring and evaluation arrangements and budgeted M&E plan

The Regional Management Unit will be responsible for monitoring and evaluation (M & E), including the organization of project evaluations, the approval of annual work plans and budget checking, the monitoring of project progress. The RMU will be in charge of identifying issues and proposing corrective actions, that will facilitate the delivery of project's results in time and support coordination and networking with other related initiatives and institutions within the country and the region.

During implementation, the communication and coordination mechanisms in place will need to be taken care of to ensure that areas of common interest are addressed in a cost-effective manner.

The project will be monitored by the following (M&E) activities and its budget is provided in the chart below.

M&E Activity	Responsible Parties	Budget (USD)	Timeframe																Notes
			2019				2020				2021				2022				
			Quarters				Quarters				Quarters				Quarters				
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Design of a Monitoring& Evaluation System for the project	M&E expert/consultant to be recruited	10.000																	First year
Initial studies to improve baseline, gender analyses, land rights analyses and environmental and social impact	Consultant to be recruited	45.000																	First year
Field visits forme as uring the project results for each target and reporting as well as gender and land right analysis	Monitoring&Evaluation expert/Communication specialist / Project manager and Ministries in charge of Environment	120.000																	Quarterly
Monitoring and reporting the project outputs by project team	Monitoring &Evaluation expert	120.000																	Half-yearly
Visits to field sites for joint review of status, project progress and reporting	Project team at OSS and Ministries in charge of Environment	20.000																	Yearly

Mid-term evaluation and reporting	M&E Experts & Project manager	20.000																	At the end of the first two years
Technical Final evaluation and reporting	M & Experts & Project manager	20.000																	At least two months before the project closure
Project Audit	Executing entity	10.000																	After the end of the project
Final Project Audit	OSS	10.000																	At least two months before the project closure
Total M&E costs		**375 000**																	

Project Launch

A project kick-off workshop will take place during the first two months after the start of the project with those who are involved in the project organization structure. The kick-off workshop is crucial to strengthen ownership of project's goals, results and set up the first year's annual work plan.

The kick-off workshop will address a number of key issues, including:

- Help all partners to fully understand and appropriate the project. Detail the roles, support services and complementary responsibilities between OSS and project's staff. Discuss roles, functions, and responsibilities within the project's decision-making structures, including reports, communication, and conflicts resolution. The terms of reference for the project staff will, if necessary, be discussed again.
- Finalize the first annual work plan, review and agree on indicators, objectives and their checking means, and recheck assumptions and risks.
- Provide a detailed overview of reports, monitoring, and evaluation (M&E).
- Discuss financial reports procedures, obligations and annual audit procedures.

A kick-off workshop report is a key reference document and should be prepared and shared with participants to formalize all the agreements and plans agreed upon during this meeting.

During the project implementation phase

A monitoring and evaluation system of the ADAPT-WAP project is managed by the Regional Management Unit hosted by OSS. It is structured among orientation and decision-making actors and the operational and execution actors.

Table 4: Project monitoring and evaluation actors

Actors	Roles and responsibilities
Regional Steering Committee	- Review and validation of annual work and budget plans; - Supervision, coordination, and decision-making related to the implementation of the program and the annual work plan and budget, - Review and validation of annual progress reports; - Monitoring of the recommendations' implementation.
OSS	- Review and approval of annual work plan & budget; - Review and approval of annual progress and completion reports; - Monitoring of the recommendations' implementation - Orientation and/or management decision-making
Regional Management Unit at OSS	- Development of the project's operations plan and the annual work plan and budget; - Follow-up of the project's operations plan and the annual work plan and budget execution;

Actors	Roles and responsibilities
	- Development of data collection, treatment, analysis and dissemination tools; - Coordination of collection, treatment, analysis and dissemination of data and information; - Monitoring&Evaluation activities follow-up and specific studies supervision; - Preparation and consolidation of quarterly activity reports, annual progress reports, and project completion report; - Dissemination of project evaluation and monitoring reports - Evaluation of terms of reference for project evaluation missions; - Implementation of decisions and corrective actions
National Management Unit	- Participation in the validation of the ADAPT-WAP project annual work plan and budget; - Monitoring of the project implementation in and around the WAP component and annual work and budget plans; - Gathering, treatment, analysis and management of project data; Monitoring and specific studies activities supervision; - Preparation and transmission to the Regional Unit of Management of quarterly activity reports, annual progress reports of the project - Contribution to the diffusion of project's monitoring and evaluation reports - Implementation of recommendations and decisions

Planning: Operational planning is based on the logical framework and allows the preparation of the operational plan that covers all the project's activities over its four (4) years duration. Based on this multi-annual operating plan, an annual work plan and budget are drawn up each year. It represents the prediction of activities and financial resources to be implemented during the year in order to achieve the expected results of the project. The annual work plan and budget (AWPB) is prepared by the Regional Management Unit in collaboration with the National Project Management Units. Once developed, it is submitted to the steering committee for review and consideration. The AWBP validated by the steering committee is submitted to the OSS Non-Objection FA at most one week after the steering committee's meeting.

Tools and monitoring procedure: The main elements to be monitored are: means, activities, results, and impacts. The monitoring is carried out by both the Regional Coordination Unit and National Management Unit with the support of the operational responsible partners. The data collected by each partner on the main elements above will be used for the preparation of various reports. Those annexed reports of these data will be consolidated by the regional unit. The following chart presents the follow-up tools.

N°	**Type of** monitoring	**Purpose of the** monitoring	**Responsible**
1	Monitoring of means	Monitoring of financial, human and material resources.	Administrative and financial responsible
2	Monitoring of activities	The Monitoring of activities consists of: ▪ comparing the planned activities with the activities carried out; ▪ identifying the key actors involved; ▪ highlight the gaps in achievement; ▪ explain the differences in achievement (favorable or unfavorable causes); ▪ suggest corrective measures necessary for decision-making	Assistant in charge of monitoring and evaluation of Project's activities

Mid-term of the project's cycle: The mid-term review will identify progress made toward the achievement of the results and will determine the correction of the course if necessary. It will focus on the effectiveness, efficiency, and timeliness of project implementation; will focus on issues

requiring decisions and actions; and will present the first lessons learned from designing the project, its implementation, and management.

The results of this review will be considered as recommendations for better implementation during the last two years of the project's duration. The organization, terms of reference and timetable for the mid-term review will be decided after consultation between the project parties. The terms of reference for this mid-term evaluation will be prepared by OSS, based on the guidance of the Regional Coordination Unit.

Project Final Review: An independent final evaluation will take place three months before the last meeting of the Steering Committee and will be undertaken in accordance with OSS and the AF regulations. The final evaluation will focus on the delivery of project's results as originally planned (and reviewed after the mid-term review, if such a review has occurred). The final evaluation will focus on the project impacts and sustainability of results, including the contribution to the capacity development and the achievement of global environmental benefits/objectives. The terms of reference for this evaluation will be prepared by the OSS based on the guidance of the Regional Coordination Unit. The results of the final evaluation should be presented during the project closure workshop and should also provide recommendations for a future project.

Final report: During the last three months, the project's team will prepare the project final report. This comprehensive report summarizes the results obtained (objectives, products, axes), the lessons learned, the challenges encountered and the areas where the results may not have been achieved. The project final report will be presented during the project's closure workshop and will also prepare recommendations for further steps that may need to be taken to ensure the sustainability and replicability of project's results.

Learning and Knowledge Sharing: The results of the project will be disseminated within and beyond the project area through existing information sharing networks and forums.

The project will identify and participate, as relevant and appropriate, in scientific, political and/or other networks that may be useful to the project if lessons are learned. The project will identify, analyze and share lessons learned that could be beneficial in the design and implementation of similar projects in the future.

E. Results framework for the project including milestones, targets, and indicators

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Objective: strengthen the resilience of ecosystems and improve populations' livelihoods within the WAP Complex as far as climate change is concerned through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures	Improvement degree of ecosystem resilience and population as far as CC is concerned	The resilience is low about the population and WAP complex ecosystems	50% of WAP complex vulnerable ecosystems are more resilient	-Scientific assessment report of resilience, Study, and Investigation -- Report, Disaster monitoring Report, report on Improving the living Condition of the Target Population	Regional level collaboration is not disrupted by unexpected
	Percentage of strategic reference documents (MDP, DMP, commune development plans) integrate CC issues	CC dimension is not taken into consideration in MDP and DMP	100 % of guides and addendums/appendixes are developed and annexed to MDP and DMP s		The political will of regional collaboration manifested by the States about their commitments
	Nbre of EWS developed	Disasters are not managed in a suitable way,	01 Early Warning System is deployed in the WAP complex and its localities		Favorable context to constructive exchanges at a country level about risks early warning of and catastrophes
	Rates of households/households that have benefited from activities that improve their standard of living,	The living conditions of the population are unfavorable	At least 60% of the target population has an improved living condition,		Politicization in the choice of the target beneficiaries in the localities
Component 1: Integration of Climate Change Aspects (MREWS) into the management of WAP Complex					

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Results 1.1 The climate dimension and its risks are integrated into the existing master development plan and the development and management plans of the complex.	Development and validation of CC integration guides for MDP and DMPs.The Development and Validation of the Guide for the Integration of CC for the MDP and the DMP.	CC dimension is not taken into consideration in MDP and DMP	The MDP and the DMP integrate the issues and elements of CC	Study Report, Integration Tools, Workshop Report	Regional Collaboration is not disrupted by unexpected events
Output 1.1.1 Technical documents incorporating CC are developed and put in the appendixes of MDP and DMP	The development of CC integration guides, for MDP and DMP, The updating of the Geographic Information System	Lack of CC integration tools, the current GIS is not functional and not updated.	At the end of the year 1 of the project, 01 technical annex integrating CC of the SDA is available and 02 technical annexes integrating CC to the DMP blocks Arly-Pendjari and W are available	Validation report of the annexes, GIS is functional and validated	Political will of regional collaboration demonstrated by States for a tool of integration of CC in the MDP, DMP and for the PA / ACC regional complex WAP
Output 1.1.2 : The technical appendices integrating the CC with the development plans of communes (PCD) bordering the WAP are elaborated	Elaboration of an adaptation plan of WAP complex to CC, 19 technical appendices to the Development Plans of communes validated	Absence of PAC / ACC at the local level	At the end of the first year:01 CC adaptation plan for WAP complex is carried out and adopted, 19 technical appendices of adaptation to CC of the development plans of communes are available	- Validation report of the Adaptation plan - Validation report of the technical annexes - Workshop report	Regulatory and decentralization legislation in the countries are favorable to PAC/ACC development
Component 2: Design and implementation of a multi-hazard early warning system (drought, floods, and fires)					
Result 2.1: Early warning system is used by beneficiaries to manage emergencies	Nbre of EWS about climatic risks functional on the WAP complex and its	Absence of EWS on the WAP complex; the riparian population has no knowledge about EWS	01 EWS is installed and functional; At least 50% of riparian populations are aware of EWS	EWS Monitoring report, Activity report	Political will of regional collaboration manifested by

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
	surroundings; the number of beneficiaries/users / EWS				the states for a regional EWS
Output 2.1.1: EWS is designed and validated	Development and validation of 6 preliminary technical studies Design and development of EWS technical and institutional prototype	WAP does not have a mechanism of coordination for disasters management	At the end of the first year of the project : - 06 preliminary studies (hydrometeorology, flood risk prediction, drought risk, warning thresholds, etc.) are developed and adopted - EWS prototype is designed and validated	- Study reports - Study and EWS validation reports,	Delay in project implementation due to government red tape
Output 2.1.2: ESW is functional and deployed	Number of weather stations and number of hydrostatic stations remote transmitted, Number of computers, number of GPS, Number of EWS data dissemination tools and equipment, Number of people trained	No functional disaster monitoring system, Absence of management unit, supervision around WAP, Absence of proficient staff	At the end of the first semester of the second year of the project: - 20 weather stations and 10 remote hydrological stations are acquired, - 10 computers, 20 GPS, and 01 servers are acquired, - the EWS unit is set up, -all Management members / ESW units are trained, - the premises of the management units are rehabilitated	EWS Unit Installation Report, Training Report, Activity Report, minute of rehabilitation of management units premises	Political will of regional collaboration manifested by the states for a regional EWS.

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Output 2.1.3: Disaster Emergency Plans are setting up	The preparation of contingency plans for the 3 countries. The number of completed white/test operations. Training of emergency plan staff. Acquiring the necessary equipment for the emergency response	Absence of emergency response plan for CC disasters in the WAP complex,	At the end of the 2nd semester of the first year: - 03 emergency plans are developed and adopted. • at the end of the 2nd semester of the 2nd year: 3 white operations are implemented • , - At least 2 training sessions for the benefit of the different users are organized each year during the project implementation • 100% of the equipment needed for the emergency response is acquired	• Emergency plan documents, • Reports/acts of the training sessions • Equipment installed • Activity Report • Validation Report	Institutional and Regulatory design is set up in the 3 countries and is favorable to emergency response plans with regional aspects
Component 3 :Improving the resilience of ecosystems and the livelihoods of populations and users through the implementation of concrete adaptation actions					
Result 3.1 Resilience of populations and ecosystems is improved through suitable adaptation measures	Number of adaptation measures, Number of villages covered, Number of beneficiaries	WAP adaptation measures are not implemented	-At least 02 adaptation measures and - 15 villages take profit of them -1% of the population is informed	Activity reports, study report	Protected areas managers remain favorable to the regional management approach of concrete adaptation actions to CC

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Output 3.1.1: Transhumance corridors for livestock are developed and rest areas created with the involvement of the local labor	Number of km of corridors materialized and marked around the WAP with drinking water points and grazing areas	The corridors exist but not materialized, a lack of infrastructure and specific arrangements of the corridors. A lack of local population involvement(labor force))	-At least 80 km of corridors materialized and marked around the WAP complex per year starting from the 2nd year, -02 watering places are built / year and -50 ha of pasture areas created at each water point completed	Study report, Reception documents of works,	Regional collaboration is not disrupted by unexpected cross-border disputes Land conflicts and conflicts between livestock groups and special interest groups (farmer, park managers) can hinder the achievement of project results; Low involvement of relevant stakeholder groups (eg Traditional Authorities, City Hall, Community Livestock Groups, NGOs)

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Output 3.1.2: Water points are set up / rehabilitated in the complex with the involvement of the local labor	Number of water points arranged by WAP component	Number of existing water points is insufficient, the existing water points are not all arranged,	-During the first quarter of year 1, the geographical coordinates of the priority water points selected in the WAP complex (2 RBP, 12 W / Benin, 2 W Niger, 3 W BF, 2 PNA) are identified. -At the end of year 4 of the project, the 21 water points (are managed and equipped (pumps, solar panels ...)	Activity reports, Report of technical development studies	The managers of the protected areas remain favorable to the regional management approach of water points
Output 3.1.3: The tracks in the protected areas are maintained with the involvement of the local population or the co-management structures	Number of linear km of track maintained in each park, number of peoples involved	Exists at WAP level: W / Benin 800 km, W / Burkina 825 km W / Niger: 825 km of track a lack of local population involvement (labor)	-Keeping of 200 km of the track at least by a park with/year including local population involvement In four years: W / Benin 800 km, W / Burkina 825 km, W / Niger: 825 km of	Activity report, study report, plans of plots developed and validated, acts of population training (labor) Payment list of beneficiaries, pictures	The participation of women and youth may not be active because of the social considerations that prevent them from contributing.
Output 3.1.4: Agroforestry and small irrigation are applied	Number of riparian villages, Number of promoters, Number of plants, Number of people trained by the technique	Agroforestry techniques, small-scale irrigation, and assisted regeneration are not well adopted by residents of the WAP complex.	-By the end of the first half of year 1, at least 100 farmers and 90 women farmers are trained and followed up on agroforestry techniques. -10 000 multi-purpose agroforestry plants are available per year/country. - 100 ha year/country for agroforestry techniques, - At least 10 market garden groups in the riparian villages are backed up in equipment - At the end of the 3rd year, all the equipment of the small irrigation is acquired and granted.	Training report of beneficiaries, Small Irrigation Equipment, Activity Reports, Study Report	The regulation concerning the peripheral zones that are in the DMPs applied

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Output 3.1.5: Activities for sustainable fishing for the benefit of the riparian villages	Number of villages, Number of trained and equipped female fishmongers, Number of fish and aquaculture promoters supported	Traditional fishermen and wholesalers exist but are not trained and equipped	Every year for the first 3 years of the project: - 20 members of 05 groups of women fishmongers and processors trained and equipped with equipment ; - At least 05 fishing groups are equipped with equipment and trained in fishing and fish farming techniques.	Beneficiaries training report, Report of fishing equipment reception, Activity reports,	Social and economic context favors the reconversion action of traditional fishermen
Output 3.1.6: Wooded and pastoral areas are improved and reforested	Number of hectares of wooded area, Number of hectares of managed pastoral areas, number of people involved No. of ha developed for assisted regeneration	Pasture areas are undeveloped, abandoned woodlands; The involvement of the population of localities bordering the WAP complex not valued	-100 ha/year of multiple purpose plantation land produced and maintained; -At least 50 ha of pasture land developed per country/year -50 ha of growing area for assisted regeneration	Activity reports, study report, Mapping of managed pasture areas, training of the population (labor),	Low involvement of relevant stakeholder groups Land conflicts and conflicts between herder groups and special interest groups (farmer, park managers) can hinder the achievement of project results
Outcome 3.2: Population resilience to CC is strengthened and their standard of living is improved through income generating activities	Number of jobs created, Number of communes involved	Income Generating Activities (IGA) are not backed up	10 riparian communes out of 19 have taken profit from at least three sectors of IGA. At least 500 jobs are created	Workshop Report, Activity Report	Social and economic context promotes action at the local level

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Output 3.2.1: Leverage funds put in place to diversify income sources	- Creation of revolving fund funds -Realization of information and awareness campaigns - Number of beneficiaries trained on the operationalization manual	Lack of financial mechanisms for the population of the WAP complex as far as IGA are concerned	- By the end of the 2nd semester of the first 1, IGA operational manual is available - At least 3 information workshops and 3 beneficiary training workshops are organized in the first year, -At least 19 women and 19 young people are trained per year	Training sessions acts Workshop Report, Activity Report	Mobilization within the given timeframe of technical and financial resources to ensure the availability of leverage funds
Output 3.2.2: Income generating activities are supported	-Number of beneficiaries trained on AGRs (organic farming, breeding, beekeeping, NTFPs, improved stoves ...) -Number of endowed beneficiaries (including women, young people, etc.) with wood saving equipment, beekeeping, oil extraction, - setting up a platform - the construction of nature shops	The sources of the population's income are not diversified IGAs exist but not oriented to the resilience of the population	At the end of the year1: -A model of attic storage rack exists - An improved fireplace model exists -1 craftsman/commune is trained (improved fireplace model and attic support model) / year - at the end of the fourth year: at least 70% of the households of the riparian villages have adopted the model of improved stoves popularized. At the end of the year4: -At least 19 women and 19 young members of farmers' groups trained for organic farming; -At least 19 vulnerable women per riparian commune benefited from breeding nuclei (goats, sheep, and poultry) per year; - At the end of the year: at least 05 multifunctional platforms installed for the benefit of 05 groups of women transforming NTFPs; - 20 kits of apicultural equipment acquired for the benefit of beekeepers' promoters in the 2nd year of the project /country	Manual of the operationalization of the IGA, the modules/reports of the training, the acts/certificate of reception of the beneficiaries, The monitoring reports of the NGO / structure in charge of monitoring, Provisional / final acceptance documents for shops,	Political and legislative context promotes civil society action
component 4: Awareness, communication and capacity building for concerted, integrated and sustainable management of the WAP Complex					

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Results 4.1: Stakeholders are mobilized and sensitized through appropriate communication and capacity building	% age of concerned groups mobilized and sensitized	Existing Communication tools are not oriented to climate change	At least 70 % of the concerned groups are mobilized and sensitized	Documents, training curricula, activity report	
Output 4.1.1: Practitioners, technicians and decision makers on the technical aspects of the project are sensitized and trained on environmental issues	Number of training modules finalized Number of organized training sessions Number of practitioners, technicians, and decision-makers trained, Number of training sessions, Number of organized exchange trips	Actors around the WAP complex are not sensitized enough and trained on climate change issues.	-At least 5 specific training modules are developed and adopted at the end of the first year of the project, -At least 3 training sessions are organized per year -An exchange trip/year organized from the 2nd year	Module of validation Report Training report,	The political will for regional collaboration manifested by PA management actors for climate change issues

Objectives/Outcomes/Outputs	Indicators	Reference status	Target	Verification source	Risk and Hypothesis
Output 4.1.2: Populations are informed and sensitized	Number of awareness materials designed and disseminated, Number of awareness sessions by theme, -Number of environmental education curricula, - Number of schoolchildren/women who received training or environmental education sessions	No information, education and communication strategy for behavior change is available around WAP	, - At the end of the 2nd semester of the first year, 500 leaflets, 300 posters, 1 documentary, 15 flyers and 05 local radio spots; - At least 5 information awareness sessions/year organized from 2nd year -At least 5 sensitization sessions/year organized in the 2nd year - A curriculum/year is finalized from the 2nd year of the project	, Training reports, awareness raising report, communication Report, Workshop Report, Awareness report, activity report	No major disturbance adversely affects the socio-economic equilibrium

F. Project alignment with the Results Framework of the Adaptation Fund

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
The ADAPT-WAP project aims to strengthen the resilience of ecosystems and to improve populations' livelihoods in the WAP Complex through the establishment of a multirisk early warning system and the implementation of concrete adaptation measures.	Degree of improvement of populations' resilience to climate change	Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	**9 710 000,00**
		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 3.2. Percentage of targeted population applying appropriate adaptation responses	
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	
	Percentage of strategic reference development plans integrating Climate change aspects	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	**190 000,00**
	Number of disasters/damage controlled	Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	
		Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	
	Percentage of households with improved livelihoods	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets 6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	
Outcome 1.1 Climate dimension and risks and contingency plan are integrated into the development master plan and complex management plans of the complex	Climate Change Integration Guide is validated (No.)	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	**170 000,00**
	Climate Change Integration Addendum is included into the development master plan and complex management plans (No.)		7.2. No. of targeted development strategies with incorporated climate change priorities enforced	

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Outcome 2.1 Early warning system is applied and handled by beneficiaries to manage emergencies	An Early Warning System is designed and validated	Output 1.1: Risk and vulnerability assessments conducted and updated	1.1. No. of projects/programmes that conduct and update risk and vulnerability assessments (by sector and scale)	**220 000,00**
	No of EWS functional and deployed		1.2 No. of early warning systems (by scale) and no. of beneficiaries covered	**1 210 000,00**
	No. of MREWS users through the contingency plans for disasters	Output 1.2: Targeted population groups covered by adequate risk reduction systems	1.2.1. Percentage of target population covered by adequate risk-reduction systems	**870 000,00**
Outcome 3.1 Resilience of populations and ecosystems is improved through concrete adaptation measures	No. of adaptation measures applied	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)	**2 110 000,00**
	No. of adaptation measures applied	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	**2 240 000,00**
	……		5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	
Outcome 3.2: populations resilience to CC is strengthened and their standard of living is improved through income generation activities	No. of newly created jobs through the revolving fund	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	**90 000,00**
	No. of beneficiary villages through the income generating activities		6.2.1. Type of income sources for households generated under climate change scenario	**1.710.000,00**
Outcome 4.1 Stakeholders are mobilized and sensitized through suitable communication and capacity building	No. of communication and sensitization tools available for the different stakeholders	Output 2: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	**420 000,00**
			2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector, and scale)	
	No. of communication and sensitization tools available for populations	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1 No. of news outlets in the local press and media that have covered the topic	**480 000,00**

G. Detailed budget

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
Component 1: Integration of Climate Change Aspects (MREWS) into the management of WAP Complex	The climate dimension and its risks are integrated into the existing master development plan and the development and management plans of the complex.	Technical documents integrating CC are developed	Activity 1.1.1.1: Develop the methodology for integrating the issue of adaptation to climate change in the master development plan and the development and management plans of AP and WAP complex.	Consultancy	20 000	0	0	0	0	0	20 000
			Activity 1.1.1.2: Organize a workshop for the methodological guide validation.	Workshop and travel	20 000	0	0	0	0	0	20 000
			Activity 1.1.1.3: Develop technical appendices incorporating climate change in the master development plan and management plans of WAP complex	Consultancy	40 000	0	0	0	0	0	40 000
			Activity 1.1.1.4: Organize two (02) regional validation workshops about the technical annex of MDP and the technical annexes of the Development and Management Plan (DMP) of Blocks Arly-Pendjari and W	Workshop and travel	40 000	0	0	0	0	0	40 000
			Activity 1.1.1.5: Update the Geographic Information System of the WAP complex	Consultancy	50 000	0	0	0	0	0	50 000
			Activity 1.1.1.6: Organize a validation workshop of Geographic Information System updated	Workshop and travel	20 000	0	0	0	0	0	20 000
		The regional adaptation plan and the technical appendixes integrating the CC with the development plans of communes bordering the WAP are elaborated	Activity 1.1.2.1: Develop an adaptation plan for the WAP complex to the Climate change	Consultancy	20 000	0	0	0	0	0	20 000
			Activity 1.1.2.2: Organize a regional validation workshop of the WAP complex adaptation plan to CC	Workshop and travel	20 000	0	0	0	0	0	20 000

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
			Activity 1.1.2.3: Develop technical annexes integrating climate change into development plans (PCA / ACC) of communes bordering the WAP complex	Consultancy	100 000	25 000	25000	20000	10000	20000	0
			Activity 1.1.2.4: Organize national validation workshops for the Adaptation technical annexes to CC of the communes bordering the WAP complex development plans	Workshop and travel	30 000	6 000	6000	6000	6000	6000	0
Sub Total 1					**360 000**	**31 000**	**31 000**	**26 000**	**16 000**	**26 000**	**230 000**
Component 2: Design and implementation of a multi-hazard early warning system (drought, floods, and fires)	The early warning system is used by beneficiaries to manage emergencies	MDP is designed and validated	Activity 2.1.1.1: Conduct 6 studies for EWS implementation (the identification of climatic hazards and the risk assessment up to the EWS design that leads to Alerts)		120 000						
			Etude 1: Conduct an in-depth design study of the hydro-meteorological monitoring network	Consultancy							
			Study 2: Develop (or adopt) the forecasting model for flood risk	Consultancy							
			Study 3: Develop (or adopt) the forecasting model for drought risk	Consultancy							
			Study 4: Develop thresholds and alert levels for flood risk	Consultancy							
			Study 5: Develop thresholds and alert levels for drought risk	Consultancy							

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
			Study 6: Elaborate the Standard Operating Mode (SOM) for communication and dissemination of the alert.	Consultancy		0	0	0	0	0	120 000
			Activity 2.1.1.2: EWS prototype design on the technical and institutional level	Consultancy	60 000	0	0	0	0	0	60 000
			Activity 2.1.1.3: Organize two (02) Regional EWS Study and Prototype Validation Workshops	Workshop and travel	40 000	0	0	0	0	0	40 000
		MDP is designed and validated	Activity 2.1.2.1: Acquire and install monitoring equipment (weather stations, limnigraphs, sensors, piezometers...)	Equipment and consultancy	450 000	0	0	0	0	0	450 000
			Activity 2.1.2.2: Acquire computer equipment (servers, processing units, software, GPS ...)	equipment	200 000	0	0	0	0	0	200 000
			Activity 2.1.2.3: Acquire tools and materials to disseminate warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)	equipment	300 000	0	0	0	0	0	300 000
			Activity 2.1.2.4: Rehabilitate/build rooms for the benefit of the management unit (including EWS antennas)	building	90 000	0	0	0	0	0	90 000
			Activity 2.1.2.5: Formalize national management units (including EWS antennas) in the three countries	Meetings and travel	30 000	0	0	0	0	0	30 000
			Activity 2.1.2.6: Organize national meetings of EWS management units	Workshop and travel	30 000	10000	0	0	10000	10000	

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
			Activity 2.1.2.7: Organize regional and national training sessions on the EWS (concerning the use of the EWS, data processing, elaboration of indicator, MON, including setting up of community relays ...)	Workshop and travel	60 000	10000	0	0	10000	10000	30000
			Activity 2.1.2.8: Produce and distribute alert messages (bulletin, maps, radio message synthesis, SMS, digital media)	Consultancy and editing	50 000	-	0	0	0	0	50000
		Emergency plans for disasters are set up	Activity 2.1.3.1: Develop an emergency response plan for CC disasters at the three-country level.	Consultancy	60 000	20000	0	0	20000	20000	
			Activity 2.1.3.2. Organize training sessions on the use of the intervention plan for the benefit of the different actors involved in the three countries	Workshop and travel	30 000	10000	0	0	10000	10000	
			Activity 2.1.3.3. Acquire equipment for disaster management (3 fire-fighting machines, bicycles, motorcycles, canoe, inflatable canoes...)	equipment	600 000	200000	0	0	200000	200000	
			Activity 2.1.3.4: Implement three (3) blank operations	Consultancy and budget for operations on the field	180 000	60000			60000	60000	
Subtotal 2					2 300 000	310 000	0	0	310 000	310 000	1 370 000
improving Resilience of ecosystems and the livelihoods of population and users through the implementation of concrete adaptation actions		**Transhumance corridors for livestock are developed and pasture areas created with the involvement of the local labor**	Activity 3.1.1.1: Organize dialogue meetings and validation of the transhumance corridors selected in the communes/villages crossed	Workshop and travel	30 000	10 000	5000	5000	5000	5000	
			Activity 3.1.1.2: Carry out transhumance corridors development studies (36 km on RN19 PNA, 70 km on ECOWAS corridor 3 at W / BF, 110 km of local corridors in W / Benin and 110 km on corridor 4 of ECOWAS in Niger)	consultancy	90 000	25 000	15000	15000	20000	15000	

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
			Activity 3.1.1.3: Carry out materialization and marking work on the transhumance corridors in and around the WAP complex PAs (36 km on RN19 PNA, 70 km on ECOWAS corridor 3 at W / BF, 110 km of local corridors at W / BF). Benin, and 110 km on ECOWAS Corridor No. 4 in Niger)	consultancy	300 000	100 000	50000	50000	50000	50000	
			Activity 3.1.2.4: Build watering places and grazing areas at the existing water points.	Building works	600 000	200 000	50000	80000	120000	150000	
		Water points are arranged in the complex with the involvement of the local labors	Activity 3.1.2.1: Organize dialogue workshops to validate the locations of the priority water points (21 water points)	Workshop and travel	30 000	10 000	5000	5000	5000	5000	
			Activity3.1.2.2: To carry out technical studies of water points development (21 water points)	consultancy	90 000	30 000	0	20000	20000	20000	
			Activity 3.1.2.3: Realize the development and equipment works (pumps, solar panels, ponds ...)	Works, equipment	500 000	309 530	0	47630	71420	71420	
		Tracks in the protected areas are maintained with the involvement of the local population or co-management structures via HIL	Activity 3.1.3.1: Organize a regional technical workshop for the validation of the tracks to be maintained in the complex	Workshop and travel	20 000	-	0	0	0	0	20000
			Activity 3.1.3.2: Rehabilitate tracks by the HIL method (W / Benin 800 km, W / Burkina 825 km W / Niger: 825 km of track)	Works, building	450 000	175 000	0	75000	100000	100000	
		Agroforestry and small irrigation techniques are applied	Activity 3.1.4.1: Implement training sessions for farmers from WAP complex surrounding villages on agroforestry techniques	Consultancy, travel, workshop	120 000	31 580	25260	12640	25260	25260	
			Activity 3.1.4.2: Acquire agro-forestry plants and put them at the disposal to identified farmers	Equipment, work	50 000	15 000	5000	5000	15000	10000	
			Activity 3.1.4.4: Acquire and grant small irrigation equipment to market garden groups (motorcycles pumps, solar panels ...)	Equipment, works	400 000	100 000	75000	75000	75000	75000	
		Activities for sustainable fishing for the benefit of the surrounding villages	Activity 3.1.5.1: Identify and train women fishmongers and fish processors in the use of new tools produced by the population	Consultancy and workshop	30 000	10 000	0	10000	0	10000	

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
			Activity 3.1.5.2: Equip women fishmongers and processors with fish products (produced by the population)	equipment	90 000	30 000	0	30000	0	30000	
			Activity 3.1.5.3: Identify and train fishermen group members in improving fishing and fish farming techniques	Consultancy and workshop	30 000	10 000	0	10000	0	10000	
			Activity 3.1.5.4: To carry out technical studies of fish farming sites development	consultancy	20 000	0	0	0	0	0	20 000
			Activity 3.1.5.5: Implement fish pond management works	Works, building	300 000	100 000	0	100000	0	100000	
		The wooded and pastoral areas are improved and reforested	Activity 3.1.6.1: Organize national validation workshops for areas to be reforested and pasture areas to be improved (3 areas / 50 ha of pasture per country along the corridors developed	Workshop and travel	60 000	15 000	10000	10000	10000	15000	
			Activity 3.1.6.2: Implement reforestation works in the villages surrounding the WAP complex	Reforestation works	300 000	100 000	50000	50000	50000	50000	
			Activity 3.1.6.3: Conduct development studies of grazing areas	consultancy	60 000	20 000	10000	10000	10000	10000	
			Activity 3.1.6.4: Implement delimitation and development of grazing areas	consultancy	600 000	200 000	100000	100000	100000	100000	
			Activité 3.2.1.5: Implement natural restoration activities for the benefit of river villages	Works, restoration	180 000	30 000	20000	20000	50000	60000	
	The population livelihoods are diversified and improved	Leveraged funds set up to diversify revenue sources	Activity 3.2.1.1: Develop mechanisms and procedures for accessing leveraged funds for the diversification of AGRs	consultancy	30 000	0	0	0	0	0	30 000
			Organize information campaigns on leverage funds for the benefit of young people, women, and men	Workshop and travel	30 000	10 000	5000	5000	5000	5000	
			Activity 3.2.1.3: Select and train beneficiaries on the AGR operations manual	Consultancy and workshop	30 000	10 000	5000	5000	5000	5000	

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
		Income generating activities are supported	Activity 3.2.2.1: Identify and train the beneficiaries on the different AGRs (agriculture, organic farming, breeding, beekeeping, distillation, a collection of NTFPs as well as the manufacture of improved stoves and attic holders etc.)	Consultancy and workshop	120 000	31 580	25260	12640	25260	25260	
			Activity 3.2.2.2: Manufacture and disseminate wood saving equipment and techniques (improved stoves for salt production, processing of fish products and attic holders for food products, etc.)	Works, manufacturing	300 000	90 000	60 000	30 000	60 000	60 000	
			Activity 3.2.2.3: Acquire and grant to vulnerable women some small ruminants (goat, sheep, etc.) and poultry for breeding	Provision to buy small ruminants	300 000	90 000	60 000	30 000	60 000	60 000	
			Activity 3.2.2.4: Support groups of women processors through multifunctional platforms for processing non-timber forest products (NTFP: Shea, Baobab, Moringa, Nere, Tamarind, Balanites, Gum Arabic etc.)	Works and provision of equipment	270 000	75 000	50000	25000	60000	60000	
			Activity 3.2.2.5: Identify, train and equip beekeeper promoters in setting up beekeeping sites in riverside villages.	Consultancy and workshop	120 000	31 580	25260	12640	25260	25260	
			Activity 3.2.2.7: Support women's or youth groups for pharmacopeia development and the extraction of the oil from aromatic and medicinal plants	Works and provision of equipment	240 000	63 160	50520	25280	50520	50520	
			Activity 3.2.2.8: Equip fishermen and fish farmers that live in the localities bordering the WAP	equipment	240 000	63 160	50520	25280	50520	50520	
			Activity 3.2.2.9: Build "nature shops" for the exhibition and sale of local and artisanal products at the park entrances	building	120 000	31 580	25260	12640	25260	25260	
Subtotal 3					**6 150 000**	**2 017 170**	**777 080**	**913 750**	**1 093 500**	**1 278 500**	**70 000**
Component 4: Awareness, communication and capacity building for concerted, integrated and	**Stakeholders are gathered and sensitized through appropriate communication**	**Practitioners, technicians and decision makers are sensitized and trained for the project themes (adaptation to CC and EWS)**	Activity 4.1.1.1: Develop training modules specific to CC and EWS adaptation	consultancy	60 000	0	0	0	0	0	60 000
			Activity 4.1.1.2. Organize thematic training sessions for practitioners, technicians and agricultural extension workers	Workshop and travel	120 000	40000	0	0	40000	40000	

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
sustainable management of the WAP Complex	**and capacity building**		Activity 4.1.1.3.Organize targeted outreach and information sessions for decision makers in the three countries (simplified training modules)	Workshop and travel	90 000	30 000	0	0	30000	30000	
			Activity 4.1.1.4.Organize three trips / exchange visits, capacity building for park management units on adaptation and EWS	Travel, dsa	150 000	0	0	0	0	0	150 000
		Populations are informed and sensitized	Activity 4.1.2.1: Design and produce communication and public awareness tools (leaflets, posters, flyers, summaries, documentary, local radio spots, telephony application ...)	Consultancy and editing	120 000	0	0	0	0	0	120 000
			Activity 4.1.2.2: Organize sensitization and information days for the population on adaptation to CC and EWS in the 19 neighboring communes	Workshop and trave	150 000	45 000	30000	15000	30000	30000	
			Activity 4.1.2.3 : Design education modules on climate change, adaptation and risks management and disasters to schoolchildren	consultancy	60 000	0	0	0	0	0	60 000
			Activity 4.1.2.4: Organize educational sessions on climate change, adaptation and risks management and disasters inherent to it, for schoolchildren in the 19 neighboring communes	Workshop and trave	150 000	45 000	30000	15000	30000	30000	
Subtotal component 4					**900 000**	**160 000**	**60 000**	**30 000**	**130 000**	**130 000**	**390 000**
Subtotal of all components					**9 710 000**						
Execution costs (management unit)											
Organizing launching workshops for communities, local authorities and other stakeholders to increase knowledge about the project interventions during the inception phase				Workshop and travel	30 000	10 000			10000	10000	
Project Coordination & Management fees				Salaries and management fees	400 000	150 000			150000	100000	
Operating costs for regional and national entities				Travel, DSA, printing	342 450	114 150			114 150	114 150	
Equipment				equipment	30 000	10 000			10000	10000	
Initial studies				consultancy	40 000	15 000			15000	10000	
Audit				consultancy	20 000	7 000			7000	6000	
Monitoring outputs by Project Team				consultancy	60 000	20 000			20000	20000	

Project components	Expected results	Outputs	Activities	Budget notes	Budget ($ US)	Benin		Burkina		Niger	Regional
						W_Benin	Pendjari	Arly	W_BF	W_Niger	
S/Total					922 450	326 150	-	-	326 150	270 150	-
Total Project Cost					10 632 450	2 844 320	868 080	969 750	1 875 650	2 014 650	2 060 000
Implementation costs (implementation unit)					Cost (US$)						
Implementation and Coordination Management Fees : Project coordination costs: planning, daily management, and implementation, equipment, equipment and consumables, salaries and fees of experts in charge of the project, etc..				Salaries and management fees	410 000						
Assessment, supervision and travel expenses for monitoring : Costs of supervision missions, participation in steering committee meetings, mid-term and final evaluation and participation in workshops.				Travel, DSA, consultancies	200 000						
Financial management, accounting, administrative follow-up and financial audit : Financial management monitoring fees in line with the requirements of the Adaptation Fund, financial reports, procurement procedures, accounting, audits, etc.Bank charges related to banking transactions and transfers of funds				Consultancies, management fees	293 750						
S/Total (Implementation)					903 750						
GRANT AMOUNT					11 536 200						

The cost of the project is 10 632 450 US $ (without implementation costs) and broken down by country as follows:

Components	Benin		Burkina Faso		Niger	Execution unit	Total
	W	Pendjari	Arly	W	W		
1	31 000	31 000	26 000	16 000	26 000	230 000	360 000
2	310 000	0	0	310 000	310 000	1 370 000	2 300 000
3	2 017 170	777 080	913 750	1 093 500	1 278 500	70 000	6 150 000
4	160 000	60 000	30 000	130 000	130 000	390 000	900 000
Components sub total	**2 518 170**	**868 080**	**969 750**	**1 549 500**	**1 744 500**	**2 060 000**	**9 710 000**
	3 386 250		**2 519 250**		**1 744 500**	**2 060 000**	
Execution fees	**75 000**		**75 000**		**75 000**	**697 450**	**922 450**
Total	**3 461 250**		**2 594 250**		**1 819 500**	**2 757 450**	**10 632 450**

H. Disbursement schedule with time-bound milestones

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
Component 1: Integration of Climate Change Aspects (MREWS) into the management of WAP Complex	The climate dimension and its risks are integrated into the existing master development plan and the development and management plans of the complex.	Technical documents integrating CC are developed	Activity 1.1.1.1: Develop the methodology for integrating the issue of adaptation to climate change in the master development plan and the development and management plans of AP and WAP complex.	20 000	20 000			
			Activity 1.1.1.2: Organize a workshop for the methodological guide validation.	20 000	20 000			
			Activity 1.1.1.3: Develop technical appendices incorporating climate change in the master development plan and management plans of WAP complex	40 000	40 000			
			Activity 1.1.1.4: Organize two (02) regional validation workshops about the technical annex of MDP and the technical annexes of the DMPs of Blocks Arly-Pendjari and W	40 000	40 000			
			Activity 1.1.1.5: Update the Geographic Information System of the WAP complex	50 000	50 000			
			Activity 1.1.1.6: Organize a validation workshop of Geographic Information System updated	20 000	20 000			
		The regional adaptation plan and the technical appendixes integrating the CC with the development plans of communes bordering the	Activity 1.1.2.1: Develop an adaptation plan for the WAP complex to the Climate change	20 000	20 000			
			Activity 1.1.2.2: Organize a regional validation workshop of the WAP complex adaptation plan to CC	20 000	20 000			
			Activity 1.1.2.3: Develop technical annexes integrating climate change into development plans (PCA / ACC) of communes bordering the WAP complex	100 000	100 000			

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
		WAP are elaborated	Activity 1.1.2.4: Organize national validation workshops for the Adaptation technical annexes to CC of the communes bordering the WAP complex development plans	30 000	30 000			
		Subtotal 1		**360 000**	**360 000**	**-**	**-**	**-**
Component 2: Design and implementation of a multi-hazard early warning system (drought, floods, and fires)	The early warning system is used by beneficiaries to manage emergencies	MDP is designed and validated	Activity 2.1.1.1: Conduct 6 studies for EWS implementation (the identification of climatic hazards and the risk assessment up to the EWS design that leads to Alerts)	120 000				
			Etude 1: Conduct an in-depth design study of the hydro-meteorological monitoring network		20 000			
			Study 2: Develop (or adopt) the forecasting model for flood risk		20 000			
			Study 3: Develop (or adopt) the forecasting model for drought risk		20 000			
			Study 4: Develop thresholds and alert levels for flood risk		20 000			
			Study 5: Develop thresholds and alert levels for drought risk		20 000			
			Study 6: Elaborate the Standard Operating Mode (SOM) for communication and dissemination of the alert.		20 000			
			Activity 2.1.1.2: EWS prototype design on the technical and institutional level	60 000	60 000			
			Activity 2.1.1.3: Organize two (02) Regional EWS Study and Prototype Validation Workshops	40 000	40 000			
		MDP is designed and validated	Activity 2.1.2.1: Acquire and install monitoring equipment (weather stations, limnigraphs, sensors, piezometers...)	450 000	450 000			
			Activity 2.1.2.2: Acquire computer equipment (servers, processing units, software, GPS ...)	200 000	200 000			

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
			Activity 2.1.2.3: Acquire tools and materials to disseminate warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)	300 000	200 000	100 000		
			Activity 2.1.2.4: Rehabilitate/build rooms for the benefit of the management unit (including EWS antennas)	90 000		90 000		
			Activity 2.1.2.5: Formalize national management units (including EWS antennas) in the three countries	30 000	30 000			
			Activity 2.1.2.6: Organize national meetings of EWS management units	30 000	10 000	10 000	10 000	
			Activity 2.1.2.7: Organize regional and national training sessions on the EWS (concerning the use of the EWS, data processing, elaboration of indicator, MON, including setting up of community relays ...)	60 000	15 000	15 000	15 000	15 000
			Activity 2.1.2.8: Produce and distribute alert messages (bulletin, maps, radio message synthesis, SMS, digital media)	50 000		20 000	20 000	10 000
		Emergency plans for disasters are set up	Activity 2.1.3.1: Develop an emergency response plan for CC disasters at the three-country level.	60 000		60 000		
			Activity 2.1.3.2. Organize training sessions on the use of the intervention plan for the benefit of the different actors involved in the three countries	30 000		30 000		
			Activity 2.1.3.3. Acquire equipment for disaster management (3 fire-fighting machines, bicycles, motorcycles, canoe, inflatable canoes...)	600 000	300 000	300 000		
			Activity 2.1.3.4: Implement three (3) blank operations	180 000		60 000	60 000	60 000
Subtotal 2				2 300 000	1425000	685 000	105 000	85 000
Component 3 Improving the resilience of		Transhumance corridors for livestock are	Activity 3.1.1.1: Organize dialogue meetings and validation of the transhumance corridors selected in the communes/villages crossed	30 000	30 000			

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
ecosystems and livelihoods of population and users through the implementation of concrete adaptation actions		developed and pasture areas created with the involvement of the local labor	Activity 3.1.1.2: Carry out transhumance corridors development studies (36 km on RN19 PNA, 70 km on ECOWAS corridor 3 at W / BF, 110 km of local corridors in W / Benin and 110 km on corridor 4 of ECOWAS in Niger)	90 000	20 000	30 000	20 000	20 000
			Activity 3.1.1.3: Carry out materialization and marking work on the transhumance corridors in and around the WAP complex PAs (36 km on RN19 PNA, 70 km on ECOWAS corridor 3 at W / BF, 110 km of local corridors at W / BF). Benin, and 110 km on ECOWAS Corridor No. 4 in Niger)	300 000	50 000	100 000	100 000	50 000
			Activity 3.1.2.4: Build watering places and grazing areas at the existing water points.	600 000	150 000	150 000	150 000	150 000
		Water points are arranged in the complex with the involvement of the local labors	Activity 3.1.2.1: Organize dialogue workshops to validate the locations of the priority water points (21 water points)	30 000	30 000			
			Activity3.1.2.2: To carry out technical studies of water points development (21 water points)	90 000	30 000	30 000	30 000	
			Activity 3.1.2.3: Realize the development and equipment works (pumps, solar panels, ponds ...)	500 000	150 000	150 000	100 000	100 000
		Tracks in the protected areas are maintained with the involvement of the local population or co-management structures via HIL	Activity 3.1.3.1: Organize a regional technical workshop for the validation of the tracks to be maintained in the complex	20 000	20 000			
			Activity 3.1.3.2: Rehabilitate tracks by the HIL method (W / Benin 800 km, W / Burkina 825 km W / Niger: 825 km of track)	450 000	100 000	150 000	100 000	100 000
		Agroforestry and small irrigation	Activity 3.1.4.1: Implement training sessions for farmers from WAP complex surrounding villages on agroforestry techniques	120 000	30 000	30 000	30 000	30 000

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
		techniques are applied	Activity 3.1.4.2: Acquire agro-forestry plants and put them at the disposal to identified farmers	50 000	10 000	20 000	10 000	10 000
			Activity 3.1.4.4: Acquire and grant small irrigation equipment to market garden groups (motorcycles pumps, solar panels ...)	400 000	100 000	150 000	100 000	50 000
		Activities for sustainable fishing for the benefit of the surrounding villages	Activity 3.1.5.1: Identify and train women fishmongers and fish processors in the use of new tools produced by the population	30 000	30 000			
			Activity 3.1.5.2: Equip women fishmongers and processors with fish products (produced by the population)	90 000	30 000	30 000	30 000	
			Activity 3.1.5.3: Identify and train fishermen group members in improving fishing and fish farming techniques	30 000	10 000	10 000	10 000	
			Activity 3.1.5.4: To carry out technical studies of fish farming sites development	20 000	20000			
			Activity 3.1.5.5: Implement fish pond management works	300 000	100 000	100 000	100 000	
		The wooded and pastoral areas are improved and reforested	Activity 3.1.6.1: Organize national validation workshops for areas to be reforested and pasture areas to be improved (3 areas / 50 ha of pasture per country along the corridors developed	60 000	15 000	15 000	15 000	15 000
			Activity 3.1.6.2: Implement reforestation works in the villages surrounding the WAP complex	300 000	50 000	100 000	100 000	50 000
			Activity 3.1.6.3: Conduct development studies of grazing areas	60 000	30 000	30 000		
			Activity 3.1.6.4: Implement delimitation and development of grazing areas	600 000	100 000	200 000	200 000	100 000
			Activité 3.2.1.5: Implement natural restoration activities for the benefit of river villages	180 000	50 000	50 000	40 000	40 000

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
	The population livelihoods are diversified and improved	Leveraged funds set up to diversify revenue sources	Activity 3.2.1.1: Develop mechanisms and procedures for accessing leveraged funds for the diversification of AGRs	30 000	30 000			
			Organize information campaigns on leverage funds for the benefit of young people, women, and men	30 000	10 000	10 000	10 000	
			Activity 3.2.1.3: Select and train beneficiaries on the AGR operations manual	30 000	10 000	10 000	10 000	
		Income generating activities are supported	Activity 3.2.2.1: Identify and train the beneficiaries on the different AGRs (agriculture, organic farming, breeding, beekeeping, distillation, a collection of NTFPs as well as the manufacture of improved stoves and attic holders etc.)	120 000	30 000	30 000	30 000	30 000
			Activity 3.2.2.2: Manufacture and disseminate wood saving equipment and techniques (improved stoves for salt production, processing of fish products and attic holders for food products, etc.)	300 000	100 000	100 000	50 000	50 000
			Activity 3.2.2.3: Acquire and grant to vulnerable women some small ruminants (goat, sheep, etc.) and poultry for breeding	300 000	100 000	100 000	50 000	50 000
			Activity 3.2.2.4: Support groups of women processors through multifunctional platforms for processing non-timber forest products (NTFP: Shea, Baobab, Moringa, Nere, Tamarind, Balanites, Gum Arabic etc.)	270 000	80 000	80 000	60 000	50 000
			Activity 3.2.2.5: Identify, train and equip beekeeper promoters in setting up beekeeping sites in riverside villages.	120 000	30 000	30 000	30 000	30 000
			Activity 3.2.2.7: Support women's or youth groups for pharmacopeia development and the extraction of the oil from aromatic and medicinal plants	240 000	50 000	80 000	70 000	40 000
			Activity 3.2.2.8: Equip fishermen and fish farmers that live in the localities bordering the WAP	240 000	50 000	80 000	70 000	40 000

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
			Activity 3.2.2.9: Build "nature shops" for the exhibition and sale of local and artisanal products at the park entrances	120 000	30 000	30 000	30 000	30 000
Subtotal 3				**6 150 000**	1 675 000	1 895 000	1 545 000	1 035 000
Component 4: Awareness, communication and capacity building for concerted, integrated and sustainable management of the WAP Complex	Stakeholders are gathered and sensitized through appropriate communication and capacity building	Practitioners, technicians and decision makers are sensitized and trained for the project themes (adaptation to CC and EWS)	Activity 4.1.1.1: Develop training modules specific to CC and EWS adaptation	60 000	60 000			
			Activity 4.1.1.2. Organize thematic training sessions for practitioners, technicians and agricultural extension workers	120 000	30 000	30 000	30 000	30 000
			Activity 4.1.1.3.Organize targeted outreach and information sessions for decision makers in the three countries (simplified training modules)	90 000	30 000	30 000	20 000	10 000
			Activity 4.1.1.4.Organize three trips / exchange visits, capacity building for park management units on adaptation and EWS	150 000	40 000	40 000	40 000	30 000
		Populations are informed and sensitized	Activity 4.1.2.1: Design and produce communication and public awareness tools (leaflets, posters, flyers, summaries, documentary, local radio spots, telephony application ...)	120 000	30 000	30 000	30 000	30 000
			Activity 4.1.2.2: Organize sensitization and information days for the population on adaptation to CC and EWS in the 19 neighboring communes	150 000	40 000	40 000	40 000	30 000
			Activity 4.1.2.3: Design education modules on climate change, adaptation and risks management and disasters to schoolchildren	60 000	15 000	15 000	15 000	15 000
			Activity 4.1.2.4: Organize educational sessions on climate change, adaptation and risks management and disasters inherent to it, for schoolchildren in the 19 neighboring communes	150 000	40 000	40 000	40 000	30 000
Subtotal component 4				**900 000**	285 000	225 000	215 000	175 000
Subtotal of all components				**9 710 000**	**3 745 000**	**2 805 000**	**1 865 000**	**1 295 000**
Execution costs (PMU)								

Project components	Expected results	Extrants attendus	Activities	Budget ($ US)	Year 1	Year 2	Year 3	Year 4
Organizing launching workshops for communities, local authorities and other stakeholders to increase knowledge about the project interventions during the inception phase				30 000	30 000			
Project Coordination & Management fees				400 000	100 000	100 000	100 000	100 000
Operating costs for regional and national entities				342 450	100 000	100 000	100 000	42 450
Equipment				30 000	30 000			
Initial studies				40 000	40 000			
Audit				20 000	20 000			
Monitoring outputs by Project Team				60 000	15 000	15 000	15 000	15 000
S/Total				**922 450**	335 000	215 000	215 000	157 450
Total project Cost				**10 632 450**	4 080 000	3 020 000	2 080 000	1 452 450
Implementation costs (RMU)								
Implementation and Coordination Management Fees: Project coordination costs: planning, daily management, and implementation, equipment, equipment and consumables, salaries and fees of experts in charge of the project, etc.				410 000	110 000	100 000	100 000	100 000
Assessment, supervision and travel expenses for monitoring: Costs of supervision missions, participation in steering committee meetings, mid-term and final evaluation and participation in workshops.				200 000	30 000	30 000	30 000	110 000
Financial management, accounting, administrative follow-up and financial audit: Financial management monitoring fees in line with the requirements of the Adaptation Fund, financial reports, procurement procedures, accounting, audits, etc.Bank charges related to banking transactions and transfers of funds				293 750	73 438	73 438	73 437	73 437
S/Total				**903 750**	213 438	203 438	203 437	283 437
GRANT AMOUNT				**11 536 200**	4 293 438	3 223 438	2 283 437	1 735 887

Table 5: Chronogram of activities :

Components	Expected outcomes	Expected outputs	Activities	First year				Second year				Third year				Fourth year			
Component 1: Integration of Climate Change Aspects (MREWS) into the management of WAP Complex	The climate dimension and its risks are integrated into the existing master development plan and the development and management plans of the complex	Technical documents integrating CC are developed	Activity 1.1.1.1: Develop the methodology for integrating the issue of adaptation to climate change in the master development plan and the development and management plans of AP and WAP complex																
			Activity 1.1.1.2: Organize a workshop for the methodological guide validation																
			Activity 1.1.1.3: Develop technical appendices incorporating climate change in the master development plan and management plans of WAP complex																
			Activity 1.1.1.4: Organize two (02) regional validation workshops about the technical annex of MDP and the technical annexes of the DMPs of Blocks Arly-Pendjari and W																
			Activity 1.1.1.5: Update the Geographic Information System of the WAP complex																
			Activity 1.1.1.6: Organize a validation workshop of Geographic Information System updated																
		The regional adaptation plan and the technical appendixes integrating the CC with the development plans of communes bordering the WAP are elaborated	Activity 1.1.2.1: Develop an adaptation plan for the WAP complex to the Climate change																
			Activity 1.1.2.2: Organize a regional validation workshop of the WAP complex adaptation plan to CC																
			Activity 1.1.2.3: Develop technical annexes integrating climate change into development plans (PCA / ACC) of communes bordering the WAP complex																
			Activity 1.1.2.4: Organize national validation workshops for the Adaptation technical annexes to CC of the communes bordering the WAP complex development plans																
Component 2: Design and implementation of a multi-hazard early warning system (drought,	Early warning system is used by beneficiaries to manage emergencies	MDP is designed and validated	Activity 2.1.1.1: Conduct 6 studies for EWS implementation (the identification of climatic hazards and the risk assessment up to the EWS design that leads to Alerts)																
			Study 1: Conduct an in-depth design study of the hydro-meteorological monitoring network																
			Study 2: Develop (or adopt) the forecasting model for flood risk																

Components	Expected outcomes	Expected outputs	Activities	First year				Second year				Third year				Fourth year			
floods, and fires)			Study 3: Develop (or adopt) the forecasting model for drought risk																
			Study 4: Develop thresholds and alert levels for flood risk																
			Study 5: Develop thresholds and alert levels for drought risk																
			Study 6: Elaborate the Standard Operating Mode (SOM) for communication and dissemination of the alert.																
			Activity 2.1.1.2: EWS prototype design on the technical and institutional level																
			Activity 2.1.1.3: Organize two (02) Regional EWS Study and Prototype Validation Workshops																
		the MDP is functional and deployed	Activity 2.1.2.1: Acquire and install monitoring equipment (weather stations, limnigraphs, sensors, piezometers...)																
			Activity 2.1.2.2: Acquire computer equipment (servers, processing units, software, GPS ...)																
			Activity 2.1.2.3: Acquire tools and materials to disseminate warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)																
			Activity 2.1.2.4: Rehabilitate/build rooms for the benefit of the management unit (including EWS antennas)																
			Activity 2.1.2.5: Formalize national management units (including EWS antennas) in the three countries																
			Activity 2.1.2.6: Organize national meetings of EWS management units																
			Activity 2.1.2.7: Organize regional and national training sessions on the EWS (concerning the use of the EWS, data processing, elaboration of indicator, MON, including setting up of community relays ...)																
			Activity 2.1.2.8: Produce and distribute alert messages (bulletin, maps, radio message synthesis, SMS, digital media)																
		Emergency plans for disasters are set up	Activity 2.1.3.1: Develop an emergency response plan for CC disasters at the three-country level.																
			Activity 2.1.3.2. Organize training sessions on the use of the intervention plan for the benefit of the different actors involved in the three countries																

Components	Expected outcomes	Expected outputs	Activities	First year				Second year				Third year				Fourth year			
			Activity 2.1.3.3. Acquire equipment for disaster management (3 fire-fighting machines, bicycles, motorcycles, canoe, inflatable canoes...)																
			Activity 2.1.3.4: Implement three (3) blank operations																
Component 3: Improving the resilience of ecosystems and livelihoods of population and users through the implementation of concrete adaptation actions		Transhumance corridors for livestock are developed and pasture areas created with the involvement of the local labor	Activity 3.1.1.1: Organize dialogue meetings and validation of the transhumance corridors selected in the communes/villages crossed																
			Activity 3.1.1.2: Carry out transhumance corridors development studies (36 km on RN19 PNA, 70 km on ECOWAS corridor 3 at W / BF, 110 km of local corridors in W / Benin and 110 km on corridor 4 of ECOWAS in Niger)																
			Activity 3.1.1.3: Carry out materialization and marking work on the transhumance corridors in and around the WAP complex PAs (36 km on RN19 PNA, 70 km on ECOWAS corridor 3 at W / BF, 110 km of local corridors at W / BF). Benin, and 110 km on ECOWAS Corridor No. 4 in Niger)																
			Activity 3.1.2.4: Build watering places and grazing areas at the existing water points.																
		Water points are arranged in the complex with the involvement of the local labors	Activity 3.1.2.1: Organize dialogue workshops to validate the locations of the priority water points (21 water points)																
			Activity3.1.2.2: To carry out technical studies of water points development (21 water points)																
			Activity 3.1.2.3: Realize the development and equipment works (pumps, solar panels, ponds ...)																
		Tracks in the protected areas are maintained with the involvement of the local population or co-management structures via HIL	Activity 3.1.3.1: Organize a regional technical workshop for the validation of the tracks to be maintained in the complex																
			Activity 3.1.3.2: Rehabilitate tracks by the HIL method (W / Benin 800 km, W / Burkina 825 km W / Niger: 825 km of track)																
		Agroforestry and small irrigation techniques are applied	Activity 3.1.4.1: Implement training sessions for farmers from WAP complex surrounding villages on agroforestry techniques																
			Activity 3.1.4.2: Acquire agro-forestry plants and put them at the disposal to identified farmers																
			Activity 3.1.4.4: Acquire and grant small irrigation equipment to market garden groups (motorcycles pumps, solar panels ...)																

Components	Expected outcomes	Expected outputs	Activities	First year				Second year				Third year				Fourth year			
		Activities for sustainable fishing for the benefit of the surrounding villages	Activity 3.1.5.1: Identify and train women fishmongers and fish processors in the use of new tools produced by the population																
			Activity 3.1.5.2: Equip women fishmongers and processors with fish products (produced by the population)																
			Activity 3.1.5.3: Identify and train fishermen group members in improving fishing and fish farming techniques																
			Activity 3.1.5.4: To carry out technical studies of fish farming sites development																
			Activity 3.1.5.5: Implement fish pond management works																
		The wooded and pastoral areas are improved and reforested	Activity 3.1.6.1: Organize national validation workshops for areas to be reforested and pasture areas to be improved (3 areas / 50 ha of pasture per country along the corridors developed																
			Activity 3.1.6.2: Implement reforestation works in the villages surrounding the WAP complex																
			Activity 3.1.6.3: Conduct development studies of grazing areas																
			Activity 3.1.6.4: Implement delimitation and development of grazing areas																
	People's livelihoods are diversified and improved		Activity 3.2.1.5: Implement natural restoration activities for the benefit of river villages																
		Leveraged funds set up to diversify revenue sources	Activity 3.2.1.1: Develop mechanisms and procedures for accessing leveraged funds for the diversification of AGRs																
			Organize information campaigns on leverage funds for the benefit of young people, women, and men																
			Activity 3.2.1.3: Select and train beneficiaries on the AGR operations manual																
		Income generating activities are supported	Activity 3.2.2.1: Identify and train the beneficiaries on the different AGRs (agriculture, organic farming, breeding, beekeeping, distillation, a collection of NTFPs as well as the manufacture of improved stoves and attic holders etc.)																
			Activity 3.2.2.2: Manufacture and disseminate wood saving equipment and techniques (improved stoves for salt production, processing of fish products and attic holders for food products, etc.)																

Components	Expected outcomes	Expected outputs	Activities	First year				Second year				Third year				Fourth year			
			Activity 3.2.2.3: Acquire and grant to vulnerable women some small ruminants (goat, sheep, etc.) and poultry for breeding																
			Activity 3.2.2.4: Support groups of women processors through multifunctional platforms for processing non-timber forest products (NTFP: Shea, Baobab, Moringa, Nere, Tamarind, Balanites, Gum Arabic etc.)																
			Activity 3.2.2.5: Identify, train and equip beekeeper promoters in setting up beekeeping sites in riverside villages.																
			Activity 3.2.2.7: Support women's or youth groups for pharmacopeia development and the extraction of the oil from aromatic and medicinal plants																
			Activity 3.2.2.8: Equip fishermen and fish farmers that live in the localities bordering the WAP																
			Activity 3.2.2.9: Build "nature shops" for the exhibition and sale of local and artisanal products at the park entrances																
Component 4: Awareness, communication and capacity building for a concerted, integrated and sustainable management of the WAP Complex	Stakeholders are mobilized and sensitized through appropriate communication and capacity building	Practitioners, technicians and decision makers are sensitized and trained for the project themes (adaptation to CC and EWS)	Activity 4.1.1.1: Develop training modules specific to CC and EWS adaptation																
			Activity 4.1.1.2. Organize thematic training sessions for practitioners, technicians and agricultural extension workers																
			Activity 4.1.1.3. Organize targeted outreach and information sessions for decision makers in the three countries (simplified training modules)																
			Activity 4.1.1.4. Organize three trips/exchange visits, capacity building for park management units on adaptation and EWS																
			Activity 4.1.2.1: Design and produce communication and public awareness tools (leaflets, posters, flyers, summaries, documentary, local radio spots, telephony application ...)																
			Activity 4.1.2.2: Organize sensitization and information days for the population on adaptation to CC and EWS in the 19 neighboring communes																
			Activity 4.1.2.3: Design education modules on climate change, adaptation and risks management and disasters to schoolchildren																
			Activity 4.1.2.4: Organize educational sessions on climate change, adaptation and risks management and disasters inherent to it, for schoolchildren in the 19 neighboring communes																

Components	Expected outcomes	Expected outputs	Activities	First year				Second year				Third year				Fourth year			
Component 5: Execution and M&E																			
Organizing launching workshops for communities, local authorities and other stakeholders to increase knowledge about the project interventions during the inception phase																			
Project Coordination & Management fees																			
Operating costs for regional and national entities																			
Equipment																			
Initial studies																			
Audit																			
Monitoring outputs by Project Team																			
Implementation Costs																			
Implementation and Coordination Management Fees: Project coordination costs: planning, daily management, and implementation, equipment, equipment and consumables, salaries and fees of experts in charge of the project, etc.																			
Assessment, supervision and travel expenses for monitoring: Costs of supervision missions, participation in steering committee meetings, mid-term and final evaluation and participation in workshops.																			
Financial management, accounting, administrative follow-up and financial audit: Financial management monitoring fees in line with the requirements of the Adaptation Fund, financial reports, procurement procedures, accounting, audits, etc. Bank charges related to banking transactions and transfers of funds																			

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY TH E IMPLEMENTING ENTITY

- **Record of endorsement on behalf of the government[1]:**

BURKINA FASO: **Mr. Ambroise KAFANDO** General Director of Cooperation Ministry of Economy, Finance and Development	**February 23, 2018**
BENIN **Mr. Euloge LIMA** General Directorate of the Environment Ministry in charge of the Environment	**March 5, 2018**
NIGER **Dr. Kamaye MAAZOU** Executive Secretary of the National Council of the Environment for Sustainable Development Ministry of Environment and Sustainable Development	**February 2nd, 2018**

- **Implementing Entity certification**

I certify that this proposal has been prepared in accordance with the guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (NAPA, ECOPAS, PAPE, and PAGAP.) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and to the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/	
Mr. Khatim KHERRAZ– Executive Secretary of the Sahara and Sahel Observatory (OSS) as the Implementing Entity Coordinator	
Date: April 16, 2018	Tel.: (+216) 71 206 633 Email: boc@oss.org.tn
Project Contact Person: **Nabil BEN KHATRA**	
Tel. and Email: (+216) 71 206 633; nabil.benkhatra@oss.org.tn	

[1]Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities

ENDORSEMENT LETTERS

BURKINA FASO
Unité – Progrès - Justice
****

Ministère de l'Economie, des Finances et du Développement
Directeur Général de la Coopération

ADAPTATION FUND

Letter of Endorsement by Government

Ouagadougou, 23 February, 2018

To : The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject : Endorsement for ADAPT-WAP project: Integration of climate change adaptation and mitigation measures in the concerted management of the WAP transboundary complex.

In my capacity as designated authority for the Adaptation Fund in Burkina Faso, I confirm that the above regional project proposal is in accordance with the government's national and regional priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Burkina Faso.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Sahara and Sahel Observatory (OSS) and executed by the national institution of Burkina Faso : **"Direction des Forêts du Ministère de l'Environnement, de l'Economie Verte et du Changement Climatique"**.

Sincerely,

Ambroise KAFANDO
Adaptation Fund National Designated Authority
03 BP 7067 Ouagadougou 03
Tel: +226 25 31 25 50/+226 70 41 98 41
Email: *ambkafando@gmail.com*

ADAPTATION FUND

REPUBLIQUE DU NIGER

Fraternité – Travail – Progrès

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CABINET DU PREMIER MINISTRE

==========

CONSEIL NATIONAL DE L'ENVIRONNEMENT POUR UN DEVELOPPEMENT DURABLE
SECRETARIAT EXECUTIF

==========

22/02/18

Letter of Endorsement by Government

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for ADAPT-WAP project: Integration of climate change adaptation and mitigation measures in the concerted management of the WAP transboundary complex.

In my capacity as designated authority for the Adaptation Fund in Republic of Niger, I confirm that the above regional project proposal is in accordance with the government's national and regional priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Niger.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Sahara and Sahel Observatory (OSS) and executed by la Direction Générale des Eaux et Forêts (DGEF) et le Centre National de Suivi Environnemental et Ecologique (CNSEE) in relation with other key national institutions like Conseil National de l'Environnement pour un Développement Durable.

Sincerely,

Dr. Kamayé Maâzou
Designated Authority for Adaptation Fund

Executive Secretary of the National Council
of Environment for a Sustainable Development

REPUBLIQUE DU NIGER
CNEDD
SECRETAIRE EXECUTIF
Cabinet du Premier Ministre

ADAPTATION FUND

MINISTERE DU CADRE DE VIE
ET DU DEVELOPPEMENT DURABLE

REPUBLIQUE DU BENIN

01 BP 3502 - 01 BP 3621
Cotonou
Tél. : + 229 21 31 80 45
dgecmcvdd@gmail.com

N° 02/MCVDD/AND-FA

Letter of Endorsement by Government of BENIN

Cotonou, 05th March 2018

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for ADAPT-WAP project: Integration of climate change adaptation and mitigation measures in the concerted management of the WAP-transboundary complex.

In my capacity as designated authority for the Adaptation Fund in **Benin**, I confirm that the above regional project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the **country**.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by OSS and executed by **Centre National de Gestion des Réserves de Faunes (CENAGREF).**

Sincerely,

Euloge Lima
Adaptation Fund National Designated Authority
Directeur de la Gestion des Risques et de l'Adaptation aux Changements Climatiques
Téléphones : +229 95 93 77 00 / 229 97 89 54 15
Email: limeloge@gmail.com

Consultation Workshops

(National & Regional meetings)

SAHARA AND SAHEL OBSERVATORY

NATIONAL CONSULTATION WORKSHOP

«INTEGRATION OF CLIMATE CHANGE ADAPTATION AND MITIGATION MEASURES IN THE CONCERTED MANAGEMENT OF THE WAP TRANSBOUNDARY COMPLEX: ADAPT-WAP»

REPORT

DIAPAGA, 28 FEBRUARY 2018

CONTEXT

The W-Arly-Pendjari (WAP) Complex is one of Africa's most important compositions of terrestrial transboundary ecosystems. It is considered as the largest and most important continuum of unharmed ecosystems in the West African savannah belt. Shared by Benin, Burkina Faso, and Niger, this network of protected areas consists of a number of areas with different status and protection regimes. In addition to the W transboundary Biosphere Reserve (WTBR), shared by the three countries, the WAP Complex covers the Arly National Park in Burkina Faso and the Pendjari National Park in Benin.

Including the riparian zones, the WAP Complex extends over a total area of around 50 000 km² (43% in Benin, 36% in Burkina Faso and 21% in Niger). It displays considerable biological diversity that contributes to the economic and social development of the sub-region. In the peripheral areas of the Complex and at a distance of about 40 km from its protected areas, there are more than 500 towns and villages totalling 1 million inhabitants (about 700 000 in Benin, 200 000 in Burkina Faso and 100 000 in Niger).

The natural resources of the WAP Complex represent a major asset for the local populations whose livelihoods are mainly based on agriculture, livestock breeding, fishery, forest resources (wood and non-wood products) and tourism. However, the WAP Complex is subject to multiple pressures and threats, exacerbated by climate change and variability. The WAP Complex is an important destination for agricultural migrants as well as an important crossing point for transhumant livestock, all attracted by the relatively greater availability of natural resources. Due to climate change, the WAP Complex could constitute a refuge for a larger number of migrants and hence be subject to greater pressures.

It is within this context that OSS, in collaboration with the three riparian countries, has developed a regional project entitled « Integration of Climate Change Adaptation and Mitigation Measures in the Concerted Management of The WAP Transboundary Complex: ADAPT-WAP» which aims to strengthen the resilience of ecosystems and improve populations' livelihoods within the WAP Complex and to support the countries' climate change adaptation strategies.

To this end, a project concept note has been developed, submitted to and approved by the Adaptation Fund. As agreed, a consultancy firm has been recruited by OSS, during a consultation meeting held in Cotonou on 26 October 2017, with the aim of supporting the preparation of a full project document.

During this meeting, it was also agreed to organize 3 national workshops and one regional workshop for further consultation, discussion and exchanges among the project different participants and actors.

In line with its policy, OSS attributes particular attention to the involvement of local populations and beneficiaries in all the stages of the projects/programs inception and implementation.

Accordingly, OSS envisages to disseminate all the information related to the project: its components, activities, sites, priorities, etc. with a view to collecting the comments,

proposals and possible claims of the populations' representatives and concerned actors to in and present them at the consultation workshops.

I. OBJECTIVES AND EXPECTED OUTCOMES

1.1. Objective

The national consultation workshop aimed to ensure a better involvement of the different actors and stakeholders, including women, youth and vulnerable groups in the elaboration of the final project document.

The workshop was an opportunity to determine the concerns, recommendations and expectations of the participants based on the project concept note.

More specifically, the workshop aimed to:

- **Better clarify the project activities** as well as the approaches for their implementation in line with the populations' expectations and visions;
- **Identify priority intervention sites** and assess field achievements, infrastructure and structures;
- **Take into account the participants' concerns and needs** during the elaboration of the project document.

The project has the following expected results:

- Identification of difficulties that may slow down the project activities during its implementation;
- Adoption of ideas for activities which can be implemented during the project.
- Common understanding of the project aspirations and the measures to be undertaken to reduce the effects of climate change at the project area level.

II. WORKFLOW

The mission was conducted on 27-28 February 2018 in Diapaga by an OSS delegation composed of Mr Nabil Ben KHATRA, Mr Louis Blanc TRAORE and Mr. Abdoul Karim BELLO.

1. Debriefing meeting with the local national institutions, focal point

Prior to the workshop which was held in Diapaga on 28 February 2018, the OSS delegation met with the event organizers to discuss the organizational logistics of this consultation and exchange meeting and its expected objectives.

2. Workflow

The workshop was held on 28 February 2018 in Diapaga. It was attended by about thirty participants composed of representatives of the local communities and national partners (cf. list of participants in annexe 1).

The workshop activities were conducted in line with an agenda (annexe 2) predetermined by the participants. It allowed to:

- ✓ Confirm the commitments of the national and local partners of the different project sites,
- ✓ Follow the consultation approach to harmonize views on priorities and relevance of the field actions to be conducted (infrastructures and other development/planning works)
- ✓ Adopt a roadmap for the project future activities and deadlines.

- **Opening Session**

Chaired by Mr Barnabé KABORE, Regional Director of the Environment, Green Economy and Climate Change of the East, representative of the Director-General of Water and Forests, the opening session was dedicated to the different partners and participants to present themselves and deliver their welcome address.

Opening Ceremony of the national consultation workshop

Mr Nabil Ben Khatra, Coordinator of the Environment Program at OSS, thanked the different actors and partners for their warm reception and strong commitment. He then confirmed the OSS interest in the ADAPT-WAP project which will help support the effort of other similar projects and programs in the region. He insisted that the integration of adaptation and mitigation actions in the participatory management of the WAP Complex is of a crucial and innovative importance for the ADAPT-WAP regional project.

Mr Barnabé KABORE, Regional Director of the Environment, Green Economy and Climate Change of the East, welcomed all the participants and highlighted the importance of the ADAPT-WAP project given the observed adverse effects of climate change and the need to undertake urgent measures for their mitigation and adaptation..

- **Presentation of the project concept note**

Presented by Dr ALOHOU Evariste, consultant from ACDD, the ADAPT WAP project is an initiative led by three African countries: Benin, Burkina Faso and Niger with the support of the Sahara and Sahel Observatory and the Adaptation Fund.

The project aims to strengthen the resilience of ecosystems to climate change and to improve the livelihoods of its adjacent populations through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures.

More specifically, the project aims to:

- Improve the strategic reference documents of the participating countries by integrating the climate change issue;
- Improve the resilience of populations through an Early Warning System;
- Improve ecosystems resilience and populations' livelihoods;
- Ensure the sustainability of the adaptation measures to be introduced in the project sites.

In line with these objectives, the project will be structured around (5) five components:

- Integration of climate change aspects and contingency plan (MHMREWS) in the WAP Complex management;
- Design and establishment of a multi-risk early warning system (MREWS) (drought, flood, and fires) ;
- Improving ecosystems and populations' livelihoods resilience through the implementation of concrete adaptation and mitigation actions;
- Awareness-raising and capacity building for a concerted, integrated and sustainable management of the WAP Complex;
- Project Management.

Presentation of the ADAPT-WAP project

Following the project presentation, the main comments and concerns focused on:

- Simplification of procedures for any possible access to credit under the project;
- Consideration of the human-fauna conflict;
- The calendar for the effective implementation of the project activities;

- The intervention zone at the project peripheral areas;
- Consideration of the community development plans during the project elaboration ;
- Consideration of the carbon sequestration issue during the project development;
- Consideration of village zones of hunting interest during the development of the project.

- **Group Work**

The rest of activities were conducted in two (2) groups. The group work will identify the issues, challenges and needs of riparian populations and at the institutional level (Early Warning System) (SAP) and project implementation approach).

Group Work at the National Consultation Workshop

The group work focused on the three following themes:

- Identification of the project intervention sites;
- Identification and quantification of the infrastructures and structures to be implemented in the project framework;
- The type of potential income-generating activities to be created by the project;
- Project management approaches and modalities at the regional, national and local levels.

In order to facilitate the group work, a president and reporter were designated from each group. The groups' results were reported back in plenary.

The group work results were presented (annexe) and discussed in plenary. The different amendments and concerns of the participants were noted and will be integrated in the project final document. (Full proposal)

3. Workshop Closure

The workshop ended at 6 PM with a satisfactory note from the participants and organizers. OSS and the consultancy firm recruited to provide support to the elaboration of the project full proposal have committed to pursue exchanges with the concerned actors in order to finalize the project document in due time.

The closing address was delivered by the session Chairman who thanked OSS for its support and mobilization to ensure the success of the ADAP-WAP project.

In conclusion, the major highlights of the Benin meeting were the following:

- ✓ The presence and commitment of the different actors of the host country both at the central and local level, including populations' representatives, farmers, fishers, women, youths and livestock breeders,
- ✓ The plenary and group work conducted based on maps has allowed to collect and localize priority intervention sites and infrastructures in line with the project objectives and expected results.

ANNEXES

Annexe 1 : List of participants

INTÉGRATION DES MESURES D'ADAPTATION ET D'ATTÉNUATION AUX CHANGEMENTS CLIMATIQUES DANS LA GESTION CONCERTÉE DU COMPLEXE TRANSFRONTALIER W-ARLY-PENDJARI (ADAPT-WAP)

OBSERVATOIRE DU SAHARA ET DU SAHEL

ADAPTATION FUND

ATELIER NATIONAL DE CONCERTATION SUR LE PROJET ADAPT-WAP

28 FÉVRIER 2018, DIAPAGA, BURKINA FASO

N°	Participant	Position/Institution	E-mail	Telephone	Signature
01	AGBAHOUNGBA Fidèl	ACDI	agbagafidel@gmail.com	+22997627595	
02	ALOHOU Evariste	Consultant ACDI	evaristealohou@hotmail.com	+22997769766	
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04	OUOBA Boundi	Président Commission environnement Tansarga	-	+22670397860	
05	AFFOUKON O. Mathias	Conservateur Parc W Bénin	affoukonmathias@gmail.com	0022995346480	
06	GOULDIATI Boukari	Agriculteur	-	+22661853164	
07	Couldiati Labidi	Coutumier	-	+226 61661363	
08	Couldiati Kondjoa	Union Provinciale GVGF		+226 70891333	
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10	Sangna Sougoudi	Agriculteur			

N°	Participant	Position/Institution	E-mail	Telephone	Signature
11	Sagnon Adiza	cultivateur		+226 67.75.51.38	
12	Tankoano B. Blandine	cultivateur		+226 60053349	
13	Kohoun Vincent	Pêcheur	+226 60724208	+226 60724208	
14	Bolly Amadou	Eleveur	-	-	
15	Compari Mano	Pêcheur	-	+226 73421803	
16	Thiombiano Moussa	Président (GVGF/l'Est)	7	71789885	
17	BADO PEMA	Représentant le DPECLC TAPOA	+226 71311428 pma.bado@yahoo.com	00226 71311428 00226 68085585	
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23	SANKARA Bassirou	Suivi Ecologique / RBTW	baibow31@yahoo.com	+226 70368105	
24	SAWADOGO Emmanuel	conservateur/Parc W BURKINA	emmanuelsawadogo17@yahoo.fr	+226 70122982	
25	Zida Pawaga Celestin	DFRC	zidapawaga@yahoo.fr	70237813	
26	Louis Blanc TRAORÉ	OSS/Tunis	lblanc@gmail.com	76690586	
27	Abina Abdoul Karim BELLO	OSS/Tunis	bello.AbdoulKarim@oss.org.tn	+216 71 206-637	
28	ISMAEL TINNO IBRAHIM	Chargé de programme CNSEE/Niger	tinnoismael@yahoo.fr	+227 90001897 +227 96561980	

Annexe 2: Agenda of the national consultation workshop- 28 February 2018

Time	Activities	Speakers
8.30 – 9.00 am	**Opening** - Reception and welcome address - Presentation of participants - Adoption of the workshop objectives and agenda	National partners - OSS
9.00 – 10.00 am	Plenary : Presentation of the project : • Generalities, objectives, components, activities	OSS-ACDD
10.00 – 10.30 am	***Coffee-Break***	
10.30 – 13.00 am	**Plenary Session :** - Identification of the project intervention sites - Identification and quantification of infrastructures and structures to be installed by the project , - Potential Income Generating Activities to be created by the project, - Project management approaches and modalities at the regional, national and local levels	OSS-ACDD and participants
1.00 – 2.00 pm	***Lunch***	
2.00 – 4.00 pm	**Pursuit of group works in plenary session**	
4.00 – 4.30	***Coffee-break***	
4.30 – 5.30	***Summary and closure*** - Results Reporting - Summary and workshop closure	Reporter - OSS

SAHARA AND SAHEL OBSERVATORY

NATIONAL CONSULTATION WORKSHOP

«INTEGRATION OF CLIMATE CHANGE ADAPTATION AND MITIGATION MEASURES IN THE CONCERTED MANAGEMENT OF THE WAP TRANSBOUNDARY COMPLEX: ADAPT-WAP»

REPORT

KANDI, 2 MARCH 2018

CONTEXT

The W-Arly-Pendjari (WAP) Complex is one of Africa's most important compositions of terrestrial transboundary ecosystems. It is considered as the largest and most important continuum of unharmed ecosystems in the West African savannah belt. Shared by Benin, Burkina Faso, and Niger, this network of protected areas consists of a number of areas with different status and protection regimes. In addition to the W transboundary Biosphere Reserve (WTBR), shared by the three countries, the WAP Complex covers the Arly national park in Burkina Faso and the Pendjari National Park in Benin.

Including the riparian zones, the WAP Complex extends over a total area of around 50 000 km² (43% in Benin, 36% in Burkina Faso and 21% in Niger). It displays considerable biological diversity that contributes to the economic and social development of the sub-region. In the peripheral areas of the Complex and at a distance of about 40 km from its protected areas, there are more than 500 towns and villages totalling 1 million inhabitants (about 700 000 in Benin, 200 000 in Burkina Faso and 100 000 in Niger).

The natural resources of the WAP Complex represent a major asset for the local populations whose livelihoods are mainly based on agriculture, livestock breeding, fishery, forest resources (wood and non-wood products) and tourism. However, the WAP Complex is subject to multiple pressures and threats, exacerbated by climate change and variability. The WAP Complex is an important destination for agricultural migrants as well as an important crossing point for transhumant livestock, all attracted by the relatively greater availability of natural resources. Due to climate change, the WAP Complex could constitute a refuge for a larger number of migrants and hence be subject to greater pressures.

It is within this context that OSS, in collaboration with the three riparian countries, has developed a regional project entitled « Integration of Climate Change Adaptation and Mitigation Measures in the Concerted Management of The WAP Transboundary Complex: ADAPT-WAP» which aims to strengthen the resilience of ecosystems and improve populations' livelihoods within the WAP Complex and to support the countries' climate change adaptation strategies.

To this end, a project concept note has been developed, submitted to and approved by the Adaptation Fund. As agreed, a consultancy firm has been recruited by OSS, during a consultation meeting held in Cotonou on 26 October 2017, with the aim of supporting the preparation of a full project document.

During this meeting, it was also agreed to organize 3 national workshops and one regional workshop for further consultation, discussion and exchanges among the project different participants and actors.

In line with its policy, OSS attributes particular attention to the involvement of local populations and beneficiaries in all the stages of the projects/programs inception and implementation.

Accordingly, OSS envisages to disseminate all the information related to the project: its components, activities, sites, priorities, etc. with a view to collecting the comments,

proposals and possible claims of the populations' representatives and concerned actors to in and present them at the consultation workshops.

I. OBJECTIVES AND EXPECTED OUTCOMES

1.1. Objective

The national consultation workshop aimed to ensure a better involvement of the different actors and stakeholders, including women, youth and vulnerable groups in the elaboration of the final project document.

The workshop was an opportunity to determine the concerns, recommendations and expectations of the participants based on the project concept note.

More specifically, the workshop aimed to:

- Better clarify the project activities as well as the approaches for their implementation in line with the expectations and concerns of the populations;
- Identify priority intervention sites and assess field achievements, infrastructure and structures;
- Take into account the participants' concerns and needs during the elaboration of the project document.

The project has the following expected results:

- Identification of difficulties that may slow down the project activities during its implementation;
- Adoption of ideas for new activities which can be implemented during the project.
- Common understanding of the project aspirations and the measures to be undertaken to reduce the effects of climate change at the project area level.

II. WORKFLOW

The mission was conducted on **1-2 March 2018** in Kandi by an OSS delegation composed of Mr Nabil Ben KHATRA, Mr Louis Blanc TRAORE and Mr. Abdoul Karim BELLO.

1. Debriefing meeting with the local national institutions, focal point

Prior to the workshop which was held in Sakakina Hotel in Kandi on 2 March 2018, the OSS delegation met with the event organizers to discuss the organizational logistics of this consultation and exchange meeting and its expected objectives.

2. Workflow

The workshop was held on **2 March 2018 in Kandi**. It was attended by about thirty participants composed of representatives of the local communities and national (cf. list of participants in annexe 1).
The workshop activities were conducted in line with an agenda (annexe 2) predetermined by the participants. It allowed to:

- ✓ Confirm the commitments of the national and local partners of the different project sites,
- ✓ Follow the consultation approach to harmonize views on priorities and relevance of the field actions to be conducted (infrastructures and other development/planning works)
- ✓ Adopt a roadmap for the project future activities and deadlines.

- **Opening session**

Led under the direction of the Chief of Forest Inspection, the representative of the Directorate General of Waters, Forests and Fishery, Commander DEGBO Saliou, the opening session was dedicated to the different partners and participants to present themselves and deliver their welcome address.

Mr Nabil Ben Khatra, Coordinator of the Environment Program at OSS, thanked the different actors and partners for their warm reception and strong commitment. He then confirmed the OSS interest in the ADAPT-WAP project which will help support the effort of other similar projects and programs in the region. He insisted that the integration of adaptation and mitigation actions in the participatory management of the WAP Complex is of a crucial and innovative importance for the ADAPT-WAP regional project.

In his opening address, Commander DEGBO Saliou, Chief of Forest Inspection and representative of the Directorate General of Waters, Forests and Fishery, welcomed all the participants before highlighting the importance of the ADAPT-WAP project given the adverse effects of climate change and the need to undertake urgent mitigation and adaptation measures. He stressed the importance of giving each Park its worth and of taking into

account the current state of the Complex for an effective identification and selection of needed and appropriate actions.

Opening Ceremony of the national consultation workshop, Benin

The Chief of the Angaradébou district and representative of the mayor of Kandi was unanimously selected as the Chair of the session. The reporting was ensured by the curator of the W-Benin Park.

- **Presentation of the project concept note**

Presented by Dr ALOHOU Evariste, consultant from ACDD, the ADAPT WAP project is an initiative led by three African countries: Benin, Burkina Faso and Niger with the support of the Sahara and Sahel Observatory and the Adaptation Fund.
The project aims to strengthen the resilience of ecosystems to climate change and to improve the livelihoods of its adjacent populations through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures.

More specifically, the project aims to:

- Improve the strategic reference documents by integrating the climate change dimension;
- Improve the resilience of populations through an Early Warning System;
- Improve ecosystems resilience and populations' livelihoods;
- Ensure the sustainability of the adaptation measures to be introduced in the project sites.

In line with these objectives, the project will be structured around (5) five components:

- Integration of climate change aspects and contingency plan (MHMREWS) in the WAP Complex management;
- Design and establishment of a multi-risk early warning system (MREWS) (drought, flood, and fires) ;

- Improving ecosystems and populations' livelihoods resilience through the implementation of concrete adaptation and mitigation actions;
- Awareness-raising and capacity building for a concerted, integrated and sustainable management of the WAP Complex;
- Project Management.

Presentation of the ADAPT-WAP project concept note ADAPT-WAP

Following the project presentation, the main comments and concerns focused on:

- Facilitation and simplification of procedures for any possible access to credit under the project;
- Taking into account the human-fauna conflict;
- Calendar for an effective implementation of the project activities;
- Consideration of the surface area covered by the project and the importance of the riparian population in the selection of the project actions;
- Consideration of the community development plans during the project elaboration;
- Consideration of the carbon sequestration issue during the project development;
- Consideration of market gardening and livestock farming in the income-generating activities;
- Consideration of the Improved Production System aimed at recovering degraded lands

- **Group Work**

The rest of activities were conducted in two (2) groups. This approach will help to identify the issues, challenges and needs of riparian populations and at the institutional level (Early Warning System) (SAP) and project implementation approach)

The group work focused on the three following themes:

- Identification of the project intervention sites;

- Identification and quantification of the infrastructures and structures to be implemented in the project framework;
- The type of potential income-generating activities to be created by the project;
- Project management approaches and modalities at the regional, national and local levels.
- Establishment of an information and communication mechanism on the project.

In order to facilitate the group work, a president and reporter were designated from each group. The groups' results were reported back in plenary.

The group work results were presented (annexe) and discussed in plenary. The different amendments and concerns of the participants were noted and will be integrated in the project final document. (Full proposal)

However, some issues have remained pending, including:

- The opening of the perimeter paths to reduce agricultural sling;
- The opening of paths inside the Reserve;
- The development of some existing ponds;
- The practice of organic farming adjacent to the Protected Areas;
- The establishment of drinking troughs in peripheral areas.

Group Work at the National Consultation Workshop, Benin

- **Workshop Closure**

The workshop ended at 5.49 PM with a satisfactory note from the participants and organizers. OSS and the consultancy firm recruited to provide support to the elaboration of the project full proposal have committed to pursue exchanges with the concerned actors in order to finalize the project document in due time.
The closing address was delivered by the session Chairman who thanked OSS for its support and mobilization to ensure the success of the ADAP-WAP project.

The major highlights of the Benin meeting are the following:

- The presence and commitment of different actors from the host country both at the central and local level, including populations' representatives, farmers, fishers, women, youths and livestock breeders,
- The group and plenary work allowed to collect and locate priority sites and infrastructures in line with the project objectives and expected results.
- Adaptation of the project activities with the socio-professional situation in each country.

ANNEXES

Annexe 1: List of participants

INTÉGRATION DES MESURES D'ADAPTATION ET D'ATTÉNUATION AUX CHANGEMENTS CLIMATIQUES DANS LA GESTION CONCERTÉE DU COMPLEXE TRANSFRONTALIER W-ARLY-PENDJARI (ADAPT-WAP)

OBSERVATOIRE DU SAHARA ET DU SAHEL — ADAPTATION FUND

ATELIER NATIONAL DE CONCERTATION SUR LE PROJET ADAPT-WAP

2 MARS 2018, KANDI, BÉNIN

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10	MAMATA Djibril	Responsable des Pecheurs	-	96248187	

Annexe 2: Agenda of the national consultation workshop- 2 March 2018

Time	Activities	Speakers
8.30 – 9.00 am	**Opening** - Reception and welcome address - Presentation of participants - Adoption of the workshop objectives and agenda	National partners - OSS
9.00 – 10.00 am	Plenary : Presentation of the project : • Generalities, objectives, components, activities	OSS-ACDD
10.00 – 10.30 am	***Coffee-Break***	
10.30 – 13.00 am	**Plenary Session :** - Identification of the project intervention sites - Identification and quantification of infrastructures and structures to be installed by the project , - Potential Income Generating Activities to be created by the project, - Project management approaches and modalities at the regional, national and local levels	OSS-ACDD and participants
1.00 – 2.00 pm	***Lunch***	
2.00 – 4.00 pm	**Pursuit of group work**	
4.00 – 4.30	***Coffee-break***	
4.30 – 5.30	***Summary and closure*** - Results Reporting - Summary and workshop closure	Reporter - OSS

SAHARA AND SAHEL OBSERVATORY

NATIONAL CONSULTATION WORKSHOP

«INTEGRATION OF CLIMATE CHANGE ADAPTATION AND MITIGATION MEASURES IN THE CONCERTED MANAGEMENT OF THE WAP TRANSBOUNDARY COMPLEX: ADAPT-WAP»

REPORT

TAPOA/NIGER, 4 MARCH 2018

CONTEXT

The W-Arly-Pendjari (WAP) Complex is one of Africa's most important compositions of terrestrial transboundary ecosystems. It is considered as the largest and most important continuum of unharmed ecosystems in the West African savannah belt. Shared by Benin, Burkina Faso, and Niger, this network of protected areas consists of a number of areas with different status and protection regimes. In addition to the W transboundary Biosphere Reserve (WTBR), shared by the three countries, the WAP Complex covers the Arly National Park in Burkina Faso and the Pendjari National Park in Benin.

Including the riparian zones, the WAP Complex extends over a total area of around 50 000 km² (43% in Benin, 36% in Burkina Faso and 21% in Niger). It displays considerable biological diversity that contributes to the economic and social development of the sub-region. In the peripheral areas of the Complex and at a distance of about 40 km from its protected areas, there are more than 500 towns and villages totalling 1 million inhabitants (about 700 000 in Benin, 200 000 in Burkina Faso and 100 000 in Niger).

The natural resources of the WAP Complex represent a major asset for the local populations whose livelihoods are mainly based on agriculture, livestock breeding, fishery, forest resources (wood and non-wood products) and tourism. However, the WAP Complex is subject to multiple pressures and threats, exacerbated by climate change and variability.

The WAP Complex is an important destination for agricultural migrants as well as an important crossing point for transhumant livestock, all attracted by the relatively greater availability of natural resources. Due to climate change, the WAP Complex could constitute a refuge for a larger number of migrants and hence be subject to greater pressures.

It is within this context that OSS, in collaboration with the three riparian countries, has developed a regional project entitled « Integration of Climate Change Adaptation and Mitigation Measures in the Concerted Management of The WAP Transboundary Complex: ADAPT-WAP», which aims to strengthen the resilience of ecosystems and improve populations' livelihoods within the WAP Complex and to support the countries' climate change adaptation strategies.

To this end, a project concept note has been developed, submitted to and approved by the Adaptation Fund. As agreed, a consultancy firm has been recruited by OSS, during a consultation meeting held in Cotonou on 26 October 2017, with the aim of supporting the preparation of a full project document.

During this meeting, it was also agreed to organize 3 national workshops and one regional workshop for further consultation, discussion and exchange among the project different participants and actors.

In line with its policy, OSS attributes particular attention to the involvement of local populations and beneficiaries in all the stages of projects/programs inception and implementation.

Accordingly, OSS envisages to disseminate all the information related to the project: its components, activities, sites, priorities, etc. with a view to collecting the comments, proposals and possible claims of the local populations and concerned actors and present them at the consultation workshops.

I. OBJECTIVES AND EXPECTED RESULTS

1.1. Objective

The national consultation workshop aimed to ensure a better involvement of the different actors and stakeholders, including women, youth and vulnerable groups in the elaboration of the final project document.

The workshop was an opportunity to determine the concerns, recommendations and expectations of the participants based on the project concept note.

More specifically, the workshop aimed to:

- Better clarify the project activities as well as the approaches for their implementation in line with the expectations and concerns of the local populations;
- Identify priority intervention sites and assess field achievements, infrastructure and structures;
- Take into account the concerns and needs of the local populations during the elaboration of the project document.

The project has the following expected results:

- Identification of difficulties that may slow down the project activities during its implementation;
- Adoption of ideas for new activities that can be implemented during the project.
- Common understanding of the project aspirations and the measures to be undertaken to reduce the effects of climate change at the project area level.

II. Workflow

The mission was conducted by an OSS delegation composed of Mr Nabil Ben KHATRA, Mr Louis Blanc TRAORE and Mr. Abdoul Karim BELLO.

1. Debriefing meeting with local national institutions, focal point

Prior to the workshop which was held in Tapoa on 4 March 2018, the OSS delegation met with the event organizers to discuss the organizational logistics of the consultation and exchange meeting and its expected objectives.

2. Workflow

The workshop was held on **4 March 2018 in Tapoa**. It was attended by about thirty participants composed of representatives of the local communities and national partners (cf. list of participants in annexe 1).

The workshop activities was carried out in line with an agenda (annexe 2) predetermined by the participants. It allowed to:

- ✓ Confirm the commitments of the national and local partners of the different project sites,
- ✓ Follow the consultation approach to harmonize views on priorities and relevance of the field actions to be conducted (infrastructures and other development/planning works)
- ✓ Adopt a roadmap for the project future activities and deadlines.

3. Opening Session

The opening session was chaired by the Director of the National Centre for Ecological and Environmental Surveillance (Centre National de Surveillance Ecologique et Environnementale, CNSEE), Lieutenant-Colonel MAIZAMA Abdoulaye, focal point of OSS in Niger.

Mr Nabil Ben Khatra, Coordinator of the Environment Program at OSS, thanked the different actors and partners for their warm reception and strong commitment. He then confirmed the OSS interest in the ADAPT-WAP project, which will help support the effort of other similar projects and programs in the region. He insisted that the integration of adaptation and mitigation actions in the participatory management of the WAP Complex is of a crucial and innovative importance for the ADAPT-WAP regional project.

Mr MAIZAMA Abdoulaye welcomed the participants and highlighted the importance of the ADAPT-WAP project account taken of the changing climate and the need for urgent mitigation actions.

The opening session was initiated by a prayer for the smooth running of the workshop, for peace everywhere and in memory of the Nigerian tracker killed by poachers on February 28, 2018 at the W park.

Then, the floor was given to the participants to present themselves and their institutions.

Opening Ceremony of the national consultation workshop

4. Presentation of the project concept note

Presented by Dr ALOHOU Evariste, consultant from ACDD, the ADAPT WAP project is an initiative led by three African countries: Benin, Burkina Faso and Niger with the support of the Sahara and Sahel Observatory and the Adaptation Fund.

The project aims to strengthen the resilience of ecosystems to climate change and to improve the livelihoods of its adjacent populations through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures.

More specifically, the project aims to:

- Improve the strategic reference documents of the participating countries by integrating the climate change dimension;
- Improve the resilience of populations through an Early Warning System;
- Improve the resilience of ecosystems and the livelihoods of populations;
- Ensure the sustainability of the adaptation measures to be introduced in the project sites.

In line with these objectives, the project will be structured around (5) five components:

- Integration of climate change aspects and contingency plan (MHMREWS) in the WAP Complex management;
- Design and establishment of a multi-risk early warning system (MREWS) (drought, flood, and fires) ;
- Improving ecosystems and populations' livelihoods resilience through the implementation of concrete adaptation and mitigation actions;
- Awareness-raising and capacity building for a concerted, integrated and sustainable management of the WAP Complex;

Presentation of the project concept note

Following the project presentation, the main comments and concerns focused on:

- Evidence to raise the importance of the tree, income from trees, the harmful effects of cutting trees, market gardening supports whose products are complementary to food;
- Findings to report the existence of an imbalance in terms of studies between the periphery (riparian) and the center of the W Park (species, pools, etc.);
- Suggestions and proposals relating to capacity building, support to the Shea butter processing sector (especially sorting during fruit harvesting), use of cement forks for the preparation of granaries instead of the Prosopis africana woods for example (Activity 3.2.2.3);
- Integration of climate change into Development and Management Plans.

These concerns were noted and will be taken into account during the elaboration of the project full proposal. The consultants clarified that the imbalance between the planned activities in the Park peripheries and those in the center is justified by the nature of the project which aims mainly to reduce anthropic pressure on natural resources. As for the integration of climate change in management and development documents, it could be ensured by conducting studies to bring more insight into the climate change issue.

- **Plenary Work**

The rest of activities were conducted in two (2) groups. This approach will help to identify the issues, challenges and needs of riparian populations and at the institutional level (Early Warning System) (SAP) and project implementation approach.

The group work focused on the three following themes:

- Identification of the project intervention sites;
- Identification and quantification of the infrastructures and structures to be implemented in the project framework;
- The type of potential income-generating activities to be created by the project;

These activities were discussed in plenary. Overall, all the activities presented were accepted proposals for reformulation, selection of project sites and inclusion of new activities among which:

- **Component 3, Activities 3.1.2.4; 3.2.1.1 and 3.2.1.4**: choice made on ECOWAS Corridor 3, whose development needs are felt more than corridor 4. The locations for infrastructure will be specified in future studies;
- **Component 3, Activity 3.1.4.1** : In addition to the acquisition of agro-forestry plants, the promotion of Assisted Natural Regeneration (RNA) must be added;
- **Component 3, Activity 3.2.2.1**: Extend improved stoves to other wood-consuming activities such as salt mining, fish drying.

With regards to the distribution of improved cooking stoves, the results of the vulnerability study will help in targeting beneficiaries for the extension of these households.

- **Component 3, Output 3.2.3**. : Solar plants must be installed in the WAP Complex for adjacent clinics, schools;
- **Component 3, Activity 3.3.2.4** : Add small ruminants and poultry ;
- **Component 4, Activity 4.1.2.2**. : Elaborate and implement partnerships with the local radio for awareness campaigns;
- **Component 4, Activity 4.1.2.8** : Organize capacity building exchange trips/visits;
- **Component 4**: Collaborate with existing groups, as Fada, for raising-awareness of local populations.

The discussions evoked also the human-fauna conflict for which several awareness-raising sessions must be conducted.
A number of clarifications were brought, especially on existing disaster management systems and mechanisms in Niger and the difficulty for the population to read the messages of the Early Warning System.

Participants at plenary sessions at Tapoa hotel/ Niger

5. Workshop Closure

The workshop ended at 5.49 PM with a satisfactory note from the participants and organizers. OSS and the consultancy firm recruited to provide support to the elaboration of the project full proposal have committed to pursue exchanges with the concerned actors in order to finalize the project document in due time.
The closing address was delivered by the Director of the National Centre for Ecological and Environmental Surveillance who thanked OSS for its support and mobilization to ensure the success of the ADAP-WAP project. A prayer was also made.

The major highlights of the meeting are the following:

- The presence and commitment of different actors from the host country both at the central and local level, including populations' representatives, farmers, fishers, women, youths and livestock breeders;
- Facilitation of discussions in the local language;
- The plenary work and presentations have allowed to give proposals for reformulation and activities selection and addition;
- Adaptation of the project activities to the socio-professional situation in the country.

ANNEXES

Annexe 1 : List of participants

INTÉGRATION DES MESURES D'ADAPTATION ET D'ATTÉNUATION AUX CHANGEMENTS CLIMATIQUES DANS LA GESTION CONCERTÉE DU COMPLEXE TRANSFRONTALIER W-ARLY-PENDJARI (ADAPT-WAP)

OBSERVATOIRE DU SAHARA ET DU SAHEL — ADAPTATION FUND

ATELIER NATIONAL DE CONCERTATION SUR LE PROJET ADAPT-WAP

4 MARS 2018, NIGER

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19	Abdoullay	Moussa Secrétaire	union koifit	89173829	[signature]
20	Hassan maman	Agriculteur	Bomba	98674251	[signature]
21	Amadou Abdoul	président pêche	Larganfou	97086543	[signature]
22	Haoua	Adermou procaïte	Boumba	--	[signature]
23	Hassan Hassan	chef du Village	Larganfou	88467489	[signature]
24	Sorifou Hassane	R.P. Apiculteur	Boumba	97963184	[signature]
25	Yanyeba Lori	Représentant des apiculteurs de Fanou	Mali-Haoussa	94269161	[signature]
26	Djanna Yambo	R.P. Maraîchère	Wegoron	?	[signature]
27	oumarou garba	chef du Village Karey-Kopto	Karey-Kopto	96657494	[signature]

Annexe 2: Agenda of the national consultation workshop- 4 March 2018

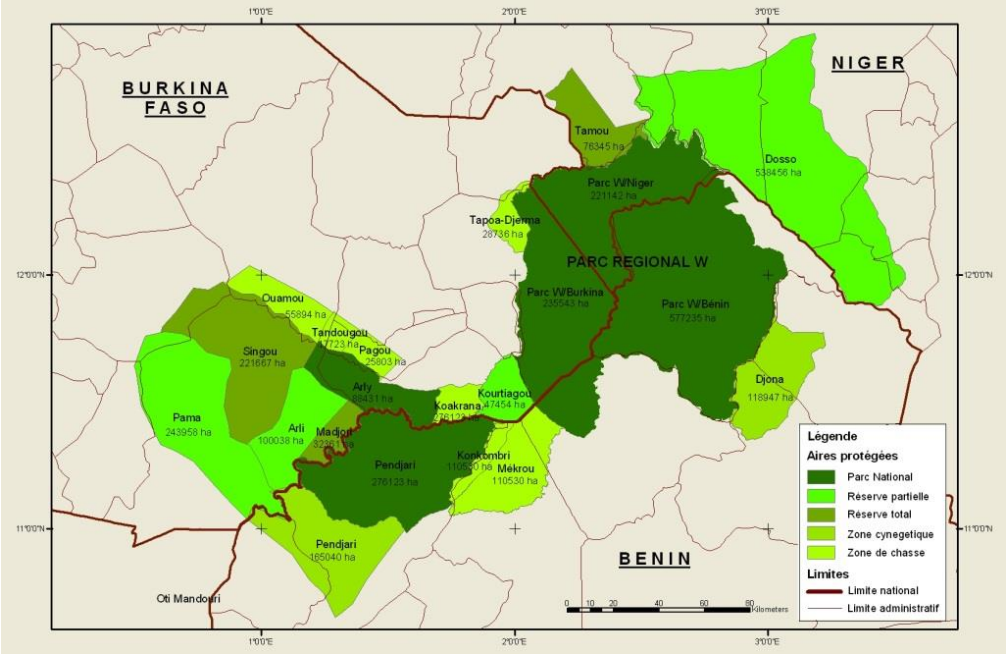
Time	Activities	Speakers
8.30 – 9.00 am	**Opening** - Reception and welcome address - Presentation of participants - Adoption of the workshop objectives and agenda	National partners - OSS
9.00 – 10.00 am	Plenary : Presentation of the project : • Generalities, objectives, components, activities	OSS-ACDD
10.00 – 10.30 am	***Coffee-Break***	
10.30 – 13.00 am	**Plenary Session :** - Identification of the project intervention sites - Identification and quantification of infrastructures and structures to be installed by the project , - Potential Income Generating Activities to be created by the project, - Project management approaches and modalities at the regional, national and local levels	OSS-ACDD and participants
1.00 – 2.00 pm	***Lunch***	
2.00 – 4.00 pm	**Pursuit of group work**	
4.00 – 4.30	***Coffee-break***	
4.30 – 5.30	***Summary and closure*** - Results Reporting - Summary and workshop closure	Reporter - OSS

REGIONAL CONSULTATION WORKSHOP:

«INTEGRATION OF CLIMATE CHANGE ADAPTATION AND MITIGATION MEASURES IN THE CONCERTED MANAGEMENT OF THE WAP TRANSBOUNDARY COMPLEX: **ADAPT-WAP»**

WORKSHOP REPORT

HOTEL: LA TAPOA, 5 MARCH 2018



MARCH 2018

1 CONTEXT

The W-Arly-Pendjari (WAP) Complex is one of Africa's most important compositions of terrestrial transboundary ecosystems. It is considered as the largest and most important continuum of unharmed ecosystems in the West African savannah belt. Shared by Benin, Burkina Faso, and Niger, this network of protected areas consists of a number of areas with different status and protection regimes. In addition to the W transboundary Biosphere Reserve (WTBR), shared by the three countries, the WAP Complex covers the Arly National Park in Burkina Faso and the Pendjari National Park in Benin.

Including the riparian zones, the WAP Complex extends over a total area of around 50 000 km² (43% in Benin, 36% in Burkina Faso and 21% in Niger). It displays considerable biological diversity that contributes to the economic and social development of the sub-region. In the peripheral areas of the Complex and at a distance of about 40 km from its protected areas, there are more than 500 towns and villages totalling 1 million inhabitants (about 700 000 in Benin, 200 000 in Burkina Faso and 100 000 in Niger).

The natural resources of the WAP Complex represent a major asset for the local populations whose livelihoods are mainly based on agriculture, livestock breeding, fishery, forest resources (wood and non-wood products) and tourism. However, the WAP Complex is subject to multiple pressures and threats, exacerbated by climate change and variability. The WAP Complex is an important destination for agricultural migrants as well as an important crossing point for transhumant livestock, all attracted by the relatively greater availability of natural resources. Due to climate change, the WAP Complex could constitute a refuge for a larger number of migrants and hence be subject to greater pressures.

It is within this context that OSS, in collaboration with the three riparian countries, has developed a regional project entitled « Integration of Climate Change Adaptation and Mitigation Measures in the Concerted Management of The WAP Transboundary Complex: ADAPT-WAP» which aims to strengthen the resilience of ecosystems and improve populations' livelihoods within the WAP Complex and to support the countries' climate change adaptation strategies.

To this end, a project concept note has been developed, submitted to and approved by the Adaptation Fund. As agreed, a consultancy firm has been recruited by OSS, during a consultation meeting held in Cotonou on 26 October 2017, with the aim of supporting the preparation of a full project document.

During this meeting, it was also agreed to organize 3 national workshops and one regional workshop for further consultation, discussion and exchanges among the project different participants and actors.

In line with its policy, OSS attributes particular attention to the involvement of local populations and beneficiaries in all the stages of the projects/programs inception and implementation.

This report sums up all the recommendations and suggestions expressed during the three national workshops. The concerned countries have agreed on a joint and regional vision of the ADAPT-WAP project as well as the modalities and approaches for its implementation.

2 Workshop Content

This regional workshop follows three national workshops and was marked by the participation of a number of authorities and managers involved in the WAP Complex management. This one-day workshop had as objectives:

- Inform present authorities, partners and managers about the progress status of the elaboration of project full document;
- Consolidate and validate the suggestions and recommendations expressed at the national workshops compared to the regional approaches and synergies to be developed by the three countries based on project concept note approved by the Adaptation Fund.;
- Validate in a consensual manner the institutional mechanisms to be set up for the project implementation.

The workshop was conducted in plenary sessions which included general presentations delivered by OSS experts and the consultancy firm followed by discussions. A detailed description of the program is enclosed in annexe 1.

3 Workflow

3.1. Opening Session

The opening session was marked by the introductory and welcome allocutions of the representatives of OSS and the project partners (focal points). The Director General of the National Center for Management of Wildlife Reserves (CENEGREF - Centre National de Gestion des Reserves de Faune) of Benin and the Director General of the National Office of Protected Areas (l'Office National des Aires Protégées, OFINAP) of Burkina Faso welcomed the participants and confirmed their satisfaction with regards to the progress made in the project document elaboration. The workshop opening address was ensured by Mr. Abdou Malam Issa, Director General of Waters and Forests at the Ministry of the Environment and Sustainable Development of Niger.

Opening Ceremony of the regional consultation workshop

Participants at the regional consultation workshop

In his intervention, the Director-General thanked OSS for organizing the regional workshop which represents a perfect occasion to consolidate and validate the main issues and points retained in the national workshops. He welcomed the participation of the directors general of the WAP Complex protected areas, which reflects the importance accorded by the countries national authorities to the Complex management. He commended the participatory approach followed for the elaboration of the project final document, which represents a first step toward the success of the project implementation. He indicated that the ADAPT-WAP project will be highly beneficial for the Complex adjacent populations and will help reduce pressure on natural resources.

At the end of the opening speech, a chairman was designated, the participants were given the floor to present themselves and the agenda of the workshop was presented and validated.

It is worth noting that the meeting was marked by the visit of the Minister of Tourism of Niger who came to congratulate the participants and OSS for the important initiative taken in collaboration with the three countries for the development of a project dedicated to the WAP Complex. The Minister called OSS and the project partners to take into consideration the touristic dimension during the elaboration of the project final document.

Group photo with the Minister of Tourism of Niger

3.2. Presentations

In line with the adopted agenda, this session was dedicated to presentations on: summary reports of the national workshops ensured by reporters from the three participating countries, the progress status of the full proposal elaboration and a reminder on the project objectives, components and activities.

Presentation of country summary report: Benin

Presentation of country summary report: Burkina Faso

The comments and feedback of the participants following the presentation of the countries summary reports insisted on the importance of:

- ✓ Taking into account the planning tools and efforts made, in particular existing Community Development Plans (PCD) , consolidating achievements, looking for possible synergies, and harmonizing management plans and PCD;
- ✓ Building on and enhancing existing and validated strategic documents related to the WAP Complex and not developing new ones
- ✓ Taking into account policies related to knowledge transfer to local populations and encouraging them to ensure and take the lead of their future;
- ✓ Proposing ways for ensuring the sustainability of the project achievements in order to allow communities to become more autonomous at the end of the project;
- ✓ Enhancing existing and planned documents by integrating the climate change dimension;
- ✓ Strengthening existing early warning systems.

Presentation of the ADAPT-WAP concept note:

The presentations focused on:

- ✓ Justification of the project: increasing pressures on the natural resources of the WAP Complex;
- ✓ Project overall and specific objectives;
- ✓ Project components and expected results;
- ✓ Progress status of collected data for the elaboration of the project full proposal;
- ✓ Ongoing Support studies;

The last part of the presentation was dedicated to the project institutional organization and implementation and management mechanisms and approaches.

Presentation of the ADAPT-WAP concept note

Discussion – Questions

Several recommendations were formulated:

- Take into account and improve existing guides and documents on the WAP Complex during the development of the project full document based on the project concept note approved by the Adaptation Fund;
- Take into account capacity building based on existing experiences and achievements of previous or current projects;
- Ensure the sustainability of the project actions and achievements notably by involving local populations and decentralized collectivities in the project implementation;
- Ensure the project institutional anchoring in accordance with the W tripartite agreement.
- Propose a draft convention for the project implementation between OSS and the ministries in charge of protected areas in the three countries.
- Develop a sector-based approach for the income-generating activities;
- Involve local elected officials for more sustainability of the project results and achievements;
- Reflect deeply on the water issue in the WAP Complex as climate change and droughts could have harmful effects on the fauna;
- Take into account the human-fauna conflict and envisage the development of communication and awareness-raising mechanisms;

Roadmap for finalizing the project full document

The third part of the workshop focused on the elaboration and validation of a roadmap for the finalization of the project document as follows:

- Finalization of the 1st draft of the project full proposal: **22 March 2018 by ACDD**
- Transmission to participating countries and receipt of countries observations: **22 to 31 March 2018**
- Consideration of countries' observations and finalization of the project document : **1 to 5 April 2018**
- Translation of the project document into English: **5 to 11 April 2018**
- Submission of the project document to the AF : **15 April 2018**

3.3. Workshop Closure

The closing remarks were uttered by the Director General of Waters and Forests of Niger who thanked the participants for their remarkable participation in the discussions during the whole meeting. He encouraged the consultancy firm to stick to the roadmap adopted to be able to submit the project full document to the Adaptation Fund in time. He thanked the OSS for its commitment and efforts made for organizing the consultation meetings and confirmed the availability of the present authorities of the three countries to collaborate and cooperate with OSS for more concrete and effective results. He ended by wishing a good return to all participants to their respective countries and structures.

ANNEXES

Annexe 1: AGENDA OF THE REGIONAL CONSULTATION WORKSHOP

Hotel la Tapoa: 5 March 2018:

Time	Activities	Speakers
8.30 – 9.00 am	**Opening** Allocution and welcome Presentation of participants Adoption of the meeting objectives and agenda	DGEF-CNSEE-OSS
9.00 – 10.00 am	- Reminder : Project objectives, components and activities - Summary of national workshops results: • Benin • Burkina Faso • Niger	National partners -ACDD-OSS
10.00 – 10.30 am	***Coffee-Break***	
10.30 am – 1.00 pm	**Plenary** : Presentation and discussions on : - Management of interaction between the 3 participating countries (infrastructure, transhumance, rangelands, climate events ….) - Project institutional organization and mechanisms and management approaches and modalities,	OSS-ACDD and participants
1.00 – 2.30 pm	***Lunch***	
***2.30*– 4.00 pm**	Pursuit of plenary work	OSS-ACDD and participants
4.00 – 4.30 pm	***Coffee-Break***	
***4.30* – 5.30**	• Elaboration of a roadmap • Summary and closure	OSS-ACDD

INTÉGRATION DES MESURES D'ADAPTATION ET D'ATTÉNUATION
AUX CHANGEMENTS CLIMATIQUES DANS LA GESTION CONCERTÉE
DU COMPLEXE TRANSFRONTALIER W-ARLY-PENDJARI (ADAPT-WAP)

OBSERVATOIRE DU SAHARA ET DU SAHEL — ADAPTATION FUND

ATELIER RÉGIONAL DE CONCERTATION
SUR LE PROJET ADAPT-WAP

5 MARS 2018, NIGER

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ADAPT WAP Project

ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT

(ESIA)

SUMMARY OF THE ESIA (ADAPT-WAP Project)

The environmental and social policy of the Adaptation Fund complies with the environmental and social policies and laws of the three countries involved (Benin, Burkina Faso, Niger), in aspects that ensure that the interventions/activities of the project do not cause environmental or social damage. The objective of the ADAPT-WAP project is to strengthen the resilience of ecosystems and improve the living conditions of the populations of the WAP complex in the face of climate change through the establishment of a Multi-Risk Early Warning System and the implementation of concrete adaptation measures.

The implementation mechanism of the ADAPT-WAP project is designed to take into account social and environmental risks in accordance with regional mitigation policy. The principles of the Adaptation Fund's environmental and social policy have been included in each of the project activities. During their implementation, all project activities have been subject to a risk assessment and will focus on mitigation actions to minimize environmental and/or social risks. In the methodological plan, the social and environmental potential impacts have been identified and suitable mitigation measures as well.

This assessment shows that the ADAPT-WAP Project brings significant environmental advances in the following areas:

Climate change: with a fundamental component (1) focused on integrating climate change aspects and its risks into the WAP complex and its adjoining areas management. The ADAPT-WAP Project promotes, on the one hand, the integration of climate change into the protected areas technical management documents and into the WAP complex (MDP and DMP) and on the second hand, the development of the adaptation plan of the WAP complex and integration to CC in the development plans of the riparian communes.

The multi-risk early warning system (MREWS): this area benefits greatly from component 2, which aims at preserving the integrity of the WAP complex's ecosystems and at ensuring the safety of neighboring populations and their property against climate change disasters. This component is dedicated to the design of an early warning system structure that is functional, reliable, effective in the WAP complex region. The acquisition of equipment and related equipment and their implementation are planned. The implementation of this system will help to minimize the negative impacts of natural disasters. Similarly, it is envisaged the development of a contingency plan for CC disasters for the three countries concerned as well as the acquisition of intervention equipment batches that will be made available to stakeholders in management. of the WAP complex.

The ADAPT-WAP project dedicates the component 3 to improve the resilience of ecosystems and the livelihoods of populations and users through the implementation of concrete adaptation actions. To this end, positive measures are planned through the following areas:

Reducing the impacts of transhumance: It is one of the main threats to the conservation of the WAP complex ecosystems and creates the recurring conflicts between farmers and herders in the riparian localities. To curb the phenomenon that could be exacerbated by climate change, the ADAPT-WAP project is planning the development of 320 km of transhumance corridors and the equipment of drinking water points and grazing areas.

Development of water points: To compensate for the lack of water points and increase the resilience of wildlife populations to climate change, the ADAPT-WAP project plans the construction and/or rehabilitation of twenty-one (21) water points in the WAP complex.

Rehabilitation or maintenance of tracks within protected areas: It is absolutely necessary to increase the effectiveness of surveillance against poaching, wildfires caused by vegetation and other forms of illegal encroachments that are complicit with local populations. This monitoring will help maintain the services provided by ecosystems. at the level of the WAP complex, especially in view of the adverse effects of climate change. To do this, the ADAPT-WAP project aims to rehabilitate or maintain at least 200 km of tracks per country each year.

Promotion of agroforestry and small-scale irrigation: Farmers on the outskirts of the WAP complex are facing harmful effects of climate risks, particularly drought. The ADAPT-WAP project aims to increase the resilience of this socio-professional group through their training in agroforestry techniques and the supply of multi-purpose agroforestry plants. Similarly, at least 10 market gardening groups will be equipped with small irrigation equipment.

Promoting sustainable fishing: Fishing in the aquatic ecosystems of the WAP complex is vulnerable to climate change. In the same way, the ADAPT-WAP project is committed to increasing the resilience of fishermen and fishmongers group to climate change through the strengthening of technical capacities (improvement of fishing techniques and fish farming, processing of fish products), material and organizational.

Promotion of reforestation and assisted regeneration: The ADAPT-WAP project is committed to fighting deforestation, drought and land degradation resulting from or associated with climate change through the achievement of 100 / ha/yr / multiple purpose plantation countries, demonstration of cultivation of 50 ha/year/country through assisted regeneration and management of forage areas enriched with fodder species. these activities will be carried out mainly in buffer zones of protected areas. In fact, the ADAPT-WAP project is helping to increase carbon sinks for the sequestration of greenhouse gases induced by project activities.

Support the diversification of income sources: Residents of the protected areas of the W complex are particularly vulnerable to climate change due to a lack of income sources diversification. In order to reduce their monetary vulnerability and increase their capacity to undertake other Income-Generating Activities (IGA), the ADAPT-WAP project is committed to setting up a leveraged fund and to popularizing the access mechanisms defined by an operationalization manual of IGA.

Promotion of income-generating activities: The ADAPT-WAP project aims to improve the living conditions of local populations while promoting the rational and sustainable exploitation of natural resources through the promotion of alternative and resilient income-generating activities (IGAs).

Among the activities selected are: beekeeping, the production of essential oils, the valorization of NTFPs (shea butter, baobab, moringa, néré, tamarind, balanites, gums), the production and maintenance of improved economic stoves and the construction of "nature shops" to display and sell local and artisanal products will be promoted in a development format of agricultural value chain

The success and sustainability of the ADAPT-WAP project activities are conditioned by the change in the behavior of the actors and beneficiaries and the strengthening of their capacities. To this end, the ADAPT-WAP project envisages strengthening the technical capacities of

policymakers and practitioners on the important issues of climate change adaptation and the multi-risk early warning system (SAP). As a result, component 4 of the ADAPT-WAP project is dedicated to sensitization, communication and capacity building of actors.

Often indirect, some provisions have negative effects that are generally minimal and mainly concern five components of the environment:

Air: the alteration of the quality of the air is instigating. It will be mainly influenced by the release of vehicle engine exhaust gases imposed by significant displacement for the implementation of most project activities resulting in low greenhouse gas emissions.

Soils: Soils will be slightly polluted by waste discharges during the construction and operation of the SAP infrastructure. There is also the risk of hydrocarbon contamination of large engines during specific development works (water points and development of grazing areas).

Vegetation: The impact of the ADAPT-WAP project on the vegetation is mainly related to the establishment of SAP infrastructure, the development of water points and pasture areas and the opening of the tracks inside. reserves.

Wildlife: The implementation of ADAPT-WAP project activities may affect the integrity of certain habitats and may disturb the tranquility of terrestrial wildlife resulting from noise from vehicle engines or operators during the installation of infrastructure. SAP, water points, and pasture areas.

Populations: The impact of the ADAPT-WAP project is related to the risks of work accidents to which maneuvers will be exposed during the various development works, the implementation of SAP infrastructures, the construction of water points and pasture areas. More importantly, during project execution, the population living near the WAP complex is exposed in their environment to the presence, foreigners during structuring work, meetings or workshops and information-awareness meetings to the risks of brewing that may influence the spread of communicable diseases STD / HIV AIDS.

The following Environmental and Social Management Plan includes maximization and mitigation activities proposed for the successful completion of the project in environmental and social terms. It has been presented here in tabular form with activities, impact indicators, types and mechanisms of monitoring as well as those responsible for monitoring and surveillance.