

AFB/PPRC.20/15 3 March 2017

Adaptation Fund Board Project and Programme Review Committee Twentieth Meeting Bonn, Germany, 14-15 March 2017

Agenda Item 8 k)

PROPOSAL FOR GUINEA-BISSAU

Background

1. The Operational Policies and Guidelines (OPG) for Parties to Access Resources from the Adaptation Fund (the Fund), adopted by the Adaptation Fund Board (the Board), state in paragraph 45 that regular adaptation project and programme proposals, i.e. those that request funding exceeding US\$ 1 million, would undergo either a one-step, or a two-step approval process. In case of the one-step process, the proponent would directly submit a fully-developed project proposal. In the two-step process, the proponent would first submit a brief project concept, which would be reviewed by the Project and Programme Review Committee (PPRC) and would have to receive the endorsement of the Board. In the second step, the fully-developed project/programme document would be reviewed by the PPRC, and would ultimately require the Board's approval.

2. The Templates approved by the Board (OPG, Annex 4) do not include a separate template for project and programme concepts but provide that these are to be submitted using the project and programme proposal template. The section on Adaptation Fund Project Review Criteria states:

For regular projects using the two-step approval process, only the first four criteria will be applied when reviewing the 1st step for regular project concept. In addition, the information provided in the 1st step approval process with respect to the review criteria for the regular project concept could be less detailed than the information in the request for approval template submitted at the 2nd step approval process. Furthermore, a final project document is required for regular projects for the 2nd step approval, in addition to the approval template.

- 3. The first four criteria mentioned above are:
 - 1. Country Eligibility,
 - 2. Project Eligibility,
 - 3. Resource Availability, and
 - 4. Eligibility of NIE/MIE.
- 4. The fifth criterion, applied when reviewing a fully-developed project document, is: 5. Implementation Arrangements.

5. It is worth noting that since the twenty-second Board meeting, the Environmental and Social (E&S) Policy of the Fund was approved and consequently compliance with the Policy has been included in the review criteria both for concept documents and fully-developed project documents. The proposals template was revised as well, to include sections requesting demonstration of compliance of the project/programme with the E&S Policy.

6. In its seventeenth meeting, the Board decided (Decision B.17/7) to approve "Instructions for preparing a request for project or programme funding from the Adaptation Fund", contained in the Annex to document AFB/PPRC.8/4, which further outlines applicable review criteria for both concepts and fully-developed proposals. The latest version of this document was launched in conjunction with the revision of the Operational Policies and Guidelines in November 2013.

7. Based on the Board Decision B.9/2, the first call for 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 April 8, 2010.

8. 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.

9. The following project concept document titled "Scaling up climate-smart agriculture in East Guinea Bissau" was submitted by the *Banque Ouest Africaine de Développement* (BOAD; West African Development Bank), which is a Regional Implementing Entity of the Adaptation Fund.

10. This is the third submission of the proposal. It was first submitted as a project concept, using the two-step approval process, for the twenty-sixth Board meeting, and the Board decided not to endorse it. It was then submitted as a project concept for the twenty-seventh Board meeting, and the Board decided to:

a) Endorse the project concept, as supplemented by the clarification response provided by the Banque Ouest Africaine de Développement (BOAD) to the request made by the technical review; and

b) Encourage the Government of Guinea-Bissau to submit through BOAD a fullydeveloped project proposal.

(Decision B. 27/9)

11. It was received by the secretariat in time to be considered in the twenty-ninth Board meeting. The secretariat carried out a technical review of the project proposal, with the diary number GNB/RIE/Agri/2015/1, and completed a review sheet.

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

13. 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. The proposal is also submitted with changes between the initial submission and the revised version highlighted.

Project Summary

<u>Guinea-Bissau</u> – Scaling up climate-smart agriculture in East Guinea Bissau

Implementing Entity: BOAD

Project/Programme Execution Cost: US\$ 798,000 Total Project/Programme Cost: US\$ 9,198,000 Implementing Fee: US\$ 781,000 Financing Requested: US\$ 9,979,000

Project Background and Context:

In the context of extreme vulnerability of family farmers to climate change in dry land East Guinea-Bissau, the overall objective of this project is to strengthen practices and capacities in climate-smart agriculture in the project region and at institutional level. Through the project's activities, food security and livelihoods are to be strengthened at household level while simultaneously increasing capacities in climate risk management and adaptation planning at all levels of governance. In particular, the project will solidify and expand the activities of GEF/UNDP-00077229 project "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" both in the 14 original tabancas in Gabú 'region' of that project while integrating an additional ~100 tabancas in the 'regions' of both Gabú and Bafatá into the project's scope of action, with a total beneficiary target population of approximately 37,000 people in East Guinea-Bissau. The project is planned to address key vulnerabilities in agriculture and water resources management, and thus contribute to immediate and longer-term development and resilience needs of extremely vulnerable farmers, with a particular focus on extremely vulnerable groups: women, elderly and children.

<u>Component 1</u>: Development of technical and institutional capacity to address increasing climatic risk in adaptation practices and planning (US\$ 700,000)

According to the proposal, Guinea-Bissau has challenges in terms of the amount and quality of data and information as well as technical capacity to implement climate change adaptation. Despite progress through NAPA development, and an increasing number of scientific studies, important gaps remain with regards to climate impacts, socio-climatic vulnerability, and effectiveness of climate adaptation actions and planning. In this context, the project proposes a component for building technical and institutional capacity for climate change adaptation planning; both long-term perspectives on adaptive capacity building/policy development and near-term climatic risk management. Particularly this would include participative development of on-site agricultural and water-management adaptation actions and the development of contingency plans (e.g. flood protection) for climate-risk management. A further focus would be on the strengthening of interactions between relevant actors for climate change adaptation: government, meteorological services, agriculture sector, research institutions, regional and national government, and the media and local and indigenous communities.

<u>Component 2</u>: Enhance the resilience of existing agricultural productive systems, including water control and management measures (US\$ 7,550,000)

This component would focus on household-/village-level interventions in climate-smart agriculture practices in order to minimize damages from climatic change and variability, as well as to contribute to agricultural and rural livelihood development. In this, the project would take

advantage of 'windows of opportunity' for adaptation: for example, agriculture in the country is still largely organic, and relies on farmer's own seeds for cultivation. Agro-ecological approaches thus have a high potential, including in national adaptation strategies or policy design. While Component 1 is planned to serve as a key input for pre-selecting project sites, all field activities of project implementation would be carried out in Component 2. The activities would include development of lowlands to maintain agricultural production in drought periods; construction of micro-dams for irrigation of rice, vegetable crops and livestock water supply, rehabilitation/ improvement of soil and pasture productivity and small-scale investments into agriculture inputs, machinery and tools; and construction of drills/wells and ramps for improved livestock and domestic water supply and market gardens development.

<u>Component 3:</u> Knowledge management of lessons learned on climate-smart agriculture and adaptation planning (US\$ 150,000)

The objective of this component would be to develop and operationalize a system of communication and knowledge sharing for the adoption of good agricultural practices resilient to climate change to support food security in Guinea Bissau and West Africa. The expected outcome of component would thus be adoption of sustainable climate-smart agricultural practices and risk management in comparable regions of Guinea-Bissau, contributing to resilience and development needs in those regions. This component would also develop and maintain a website, and develop a manual and other materials on the best practices and measures for climate-smart agriculture.



ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project

Country/Region:	Guinea-Bissau	
Project Title:	Scaling up climate-smart agric	culture in East Guinea Bissau
AF Project ID:	GNB/RIE/Agri/2015/1	
IE Project ID:	-	Requested Financing from Adaptation Fund (US Dollars): 9,979,000
Reviewer and contact person: Mikko Ollikainen		Co-reviewer(s): Daouda Ndiaye, Dirk Lamberts
IE Contact Person:	Mawuli Komi Amegadje	

Review Criteria	Questions	Comments on 30 January 2017	Comments on 20 February 2017
	 Is the country party to the Kyoto Protocol? 	Yes.	
Country Eligibility	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	Yes.	
Ducie et Elizibility	 Has the designated government authority for the Adaptation Fund endorsed the project/programme? 	Yes.	
Project Eligibility	 Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive 	Broadly, yes. However, it is noted that unlike most of the proposal, the section containing the technical description of the financially most significant project activities (Output 2.1.1 through 2.1.2, pp. 52-57) is not possible to comprehend	

capacity to the adverse effects of climate change and build in climate resilience?	due to the poor translation of the technical terminology. Also translation of geological terminology on p. 34 and crops on p. 37-38 was incomprehensible. CR1: Please review and revise the terminology in technical text describing outputs 2.1.1 and 2.1.2, among others, ensuring correctness. Output 3.1.5 makes a reference to the UNFCCC negotiation process as a recipient of some of the project results, which is not well in line with the mandate of the Fund. While sharing knowledge results internationally is a commendable objective, the focus should not be on the UNFCCC but rather broader.	CR1: Partly addressed. The proposal is easier to read but there are still sections where it is not possible to fully understand what is meant, especially in the section describing infrastructure outputs.
	CR2: Please consider revising target of output 3.1.5. The project follows a community-driven approach, where specific concrete activities will be decided by communities during project implementation.	CR2: Obsolete: the activity has been omitted.
	CR3: Please provide an indicative list of eligible activities that the communities may choose from, and describe the process by which the decisions on those subprojects will be made, including roles and responsibilities of different parties to that process. Also the process of screening and assessing the environmental and social risks and addressing their mitigation should be included in English in the main document. The proposal explains that one of the identified capacity barriers is illiteracy,	CR3: Partly addressed. There are some findings related to the E&S risk screening below.

and suggests that this would be addressed through literacy training (Output 1.2.1). It is not clear whether	
literacy could be effectively achieved among beneficiaries within the planned	
timeframe. CR4: Please consider the feasibility of achieving literacy through training, and	CR4: Addressed. The literacy training component has been replaced with other,
explain whether there are existing positive experiences of such approach in Guinea-Bissau.	more feasible activities.
CR5: Please clarify the existing land use in the planned project areas.	CR5: Addressed.
CR6: Please clarify how the ramps for livestock and domestic water supply (Output 2.1.4) would be managed after	CR6: Partly addressed. The proposal explains that this would be managed by a committee, though the composition and
their construction. Please also elaborate on what is meant by the statement "NB.	functions of the committee have not been explained.
A large-scale project will be initiated in order to solve the deep problem linked to the development of livestock in the	The large-scale project has now been briefly introduced as a US\$ 10 million livestock project being initiated with Green Climate
Northern and Eastern regions of the country which house more than 86% of head of cattle of Guinea Bissau." (p. 60).	Fund funding. Please see below on complementarity and overlap.
The proposal includes project monitoring and evaluation activities in Output 2.1.5.	
This is not correct: monitoring and evaluation of project are considered to be part of project execution and should	
be covered under execution costs. Only monitoring that does not focus on project	
execution but on variables that help the project achieve its stated objectives e.g. longer term monitoring of soil quality as	
part of government agricultural extension	

	function could be included under component costs. CAR1: Please include all project monitoring and evaluation related costs under administrative costs (execution of those activities under execution costs and supervision of those activities under the implementing entity fee).	CAR1: Addressed.
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 and Gender Policy of the Fund?	Yes. However, in a fully-developed proposal those benefits would need to be quantified. CR7: Please quantify the expected benefits from the projects, whenever possible.	CR7: Addressed.

4.	Is the project / programme cost effective?	Requires clarification. The proposal makes an effort to explain the expected cost-effectiveness of the proposed project. However, while doing so it does not compare the proposed approach to alternative options that were considered during project development and not chosen. CR8: Please explain which alternative options to improve agricultural resilience in East Guinea-Bissau were considered and not chosen, and why.	CR8: Addressed.
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?	Yes.	

	 6. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?? 7. Is there duplication of project / programme with other funding sources? 	Yes. No. The proposal has done very well in conducting an assessment of an existing project in partly the same sector and region in Guinea-Bissau, and drawn several concrete lessons on what the proposed project could learn from that earlier project, including both positive lessons and areas of improvement.	CR16 (new finding): As a response to CR6 (above), the proponent has mentioned a project to be implemented by BOAD with financing of ca. US\$ 10 million from the Green Climate Fund, which would focus on livestock resilience in the Northwest and Northeast of Guinea-Bissau (the proposed AF project would take place in Northeast, too). The information on that project is very
-	8. Does the project /	Yes.	limited, and synergies and lack of overlap have not been well elaborated.
	programme have a learning and knowledge management component to		
	capture and feedback lessons?		

9. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	Yes.	
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?	Broadly, yes. The proposal suggests, in Output 2.1.3, that the project would support community members obtaining fertilizers and pesticides to improve agricultural production, and purchase agricultural machinery. The proposed sustainability model is that the after an initial investment during the first year, supported by the project, the sales of (higher) yields during following years would help cover the costs of additional fertilizer/pesticide purchases and later equipment purchases. CR9: Please elaborate on the	CR9: Partly addressed. The proposal has provided some additional information on the committees to be tasked with managing these aspects during the project. However,

13. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	institutional arrangement for managing fertilizer and pesticide inputs and agricultural equipment, during and beyond the project, and refer to existing examples of whether such a model has been shown to work in Guinea-Bissau. Yes. As noted above, the process of screening, assessing and addressing environmental and social risks of yet to be identified sub-projects would need to be explained in the main document, in English. CAR2: Please clarify the environmental and social risk category of the project, in accordance with the Environmental and Social Policy of the Fund. Please also provide the main contents, at least, of the Environmental and Social Management Plan, in English.	the sustainability aspect has only been briefly mentioned, and the proposed solution of having an NGO take care of it has not been explained in detail. Also it has not been explained whether experiences of such model are available in Guinea-Bissau. CAR2: Partly addressed. The project is categorized as B. However, the proposal states, on p. 103 just before Table 13, that "taking into account the national standards that the project must comply with, the foreseeable risks and impacts in the implementation of the project and its classification according to Adaptation Fund ESP, the project is subjected to a simplified environmental and social impact assessment but also to the preparation of a pesticide management plan". This is not in line with the Adaptation Fund ESP. The national requirements and those of the AF ESP need to be separately identified (while they may be jointly assessed and managed and met), with the AF ESP assessments evidence-based and commensurate to the risks rather than 'simplified'. The terminology used is confusing. Project- wide, an 'environment and social management framework (ESMF)' has been developed, a 'complementary Environmental and social management plan' (ESMP) will be prepared for the unidentified sub-projects,
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Structure and terminology suggested by the AF ESP and further explained in the ESP Guidance Document, is that a project-wide ESMP is needed in case of unidentified sub- projects, which includes the mechanism of reviewing and managing ESP risks associated with the sub-projects. Further, the findings of ESMP are used to show that certain risks are insignificant. This is incompatible with the approach pertaining to unidentified subprojects (USP) that procludes adequate risk identification at this point in time since the precise location and hence environment in which the USP will be implemented are unknown. With regard to the USP approach, there are a number of issues that would need to be revised: 1) Step 3 is limited to sits selection, while this is not the only unknown for most USPs; specific USP characteristics must be considered in a specific environment to identify ESP risks. 2) Risks identification is presented as a separate step, prior to design of the USP. In practice, adequate risks identification will only be possible when a USP has been sufficiently designed. ESP risks identification and USP design will need to proceed in parallel to some extent. 3) All 15 ESP principles need to be considered in a risks identification of USP as and when these are being formulated. The project-wide ESMP has been developed whilst not being able to adequate/uldentify risks associated with USPs since their specific lorstinos, and some sufficiations.		
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		specific locations, and some specifications,

		It is mentioned that the intervention sites are already under some kind of use. CR10: Please clarify whether the project activities may result in displacement of any economic activities currently being undertaken by community members in the planned intervention sites, and if yes how the project would address such displacement. One of the identified environmental risks, under "Pollution Prevention and Resource Efficiency" is deterioration of water quality and limitation to water availability downstream from the proposed water retention structures. CR11: Please explain how negative downstream impacts resulting from water retention structures can be avoided or minimized.	 are unknown. So, there are no ESP principles that can be excluded from the safeguards process for USPs. This is yet more the case since selection (and possible exclusion) criteria for USPs will only be developed during project implementation by the Project Management Unit. CR10: Not addressed: the new information provided under Outcome 2.1 on page 49 refers to "expropriation or relocation of producers" not taking place. However, the scope of the ESP is not limited to (physical) moving of producers but also to that of their livelihood activities, which has not been addressed. CR11: Partly addressed. The proponent has responded to the question from the perspective of possible chemical pollutants such as fertilizers and pesticides. The proposal still does not address how water retention structures might limit water availability downstream, and how negative impacts could be avoided or minimized.
Resource Availability	 Is the requested project / programme funding within the cap of the country? 	Yes.	
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme	Yes.	

	budget before the fee?		
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	Yes.	
Eligibility of IE	4. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	Yes.	
Implementation Arrangements	 Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund? 	Generally speaking, yes. However, the terminology in Section III.A. is not correct, as it refers to MESD as an implementing agency. The implementing entity of the proposed project is BOAD and other entities such as MESD are executing entities. CAR3: Please revise description of management arrangement to clarify BOAD's role as the implementing entity. CR12: Please clarify whether the project Steering Committee is planned to include representatives of the civil society, or if there are other ways in which civil society organizations can participate in project decision-making.	CAR3: Addressed. CR12: Addressed, representatives of the civil society will be included.

2. Are there measures for financial and project/programme risk management?	Yes.	
3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	Yes. However, please clarify the supervisory role of BOAD as the implementing entity in section III.C. CR13	CR13: Partly addressed. The proponent should provide further information on how BOAD would apply its Environmental and Social Management System (ESMS) to the project, in line with and to meet the AF ESP requirements, including detailed allocation of roles and responsibilities. This taking into account that the IEs' environmental and social safeguards arrangements cannot be considered to ensure compliance with the ESP. The frequency of reporting by the PMU to the IE (6-monthly) on the USPs and their risks management seems inadequate to provide effective oversight and correct any shortcomings.
4. Is a budget on the Implementing Entity Management Fee use included?	Yes.	
 Is an explanation and a breakdown of the execution costs included? 	Yes. However, as noted above, the monitoring and evaluation costs would need to be included in them as well.	
 Is a detailed budget including budget notes included? 	Yes.	

7.	Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex- disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	Yes. However, the monitoring and evaluation budget on p. 136 does not correspond to the monitoring and evaluation budget in the detailed budget and, as mentioned above monitoring and evaluation costs would need to be included in execution costs budget. CR14: Please clarify how ex-post evaluation could be carried out 2-3 years after end of the project. How would the funding for it be managed?	CR14: Addressed. Ex-post evaluation will be organized and financed by BOAD.
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?	CR15: Please clarify in the breakdown of the IE fee, whether it includes supervision of the M&E function.	CR15: Addressed.
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.	
10). Is a disbursement schedule with time- bound milestones included?	Yes.	

Technical

In the context of extreme vulnerability of family farmers to climate change in dry land East Guinea-Bissau, the

S	u	m	m	а	ry	

overall objective of this project is to strengthen practices and capacities in climate-smart agriculture in the project region and at institutional level. Through the project's activities, food security and livelihoods are to be strengthened at household level while simultaneously increasing capacities in climate risk management and adaptation planning at all levels of governance. In particular, the project will solidify and expand the activities of GEF/UNDP-00077229 project "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" both in the 14 original tabancas in Gabú 'region' of that project while integrating an additional ~100 tabancas in the 'regions' of both Gabú and Bafatá into the project's scope of action, with a total beneficiary target population of approximately 37,000 people in East Guinea-Bissau

CAR1: Please include all project monitoring and evaluation related costs under administrative costs (execution of those activities under execution costs and supervision of those activities under the implementing entity fee). **CAR2:** Please clarify the environmental and social risk category of the project, in accordance with the Environmental and Social Policy of the Fund. Please also provide the main contents, at least, of the Environmental and Social Management Plan, in English.

CAR3: Please revise description of management arrangement to clarify BOAD's role as the implementing entity. **CR1:** Please review and revise the terminology in technical text describing outputs 2.1.1 and 2.1.2, among others, ensuring correctness.

CR2: Please consider revising target of output 3.1.5.

CR3: Please provide an indicative list of eligible activities that the communities may choose from, and describe the process by which the decisions on those subprojects will be made, including roles and responsibilities of different parties to that process. Also the process of screening and assessing the environmental and social risks and addressing their mitigation should be included in English in the main document.

CR4: Please consider the feasibility of achieving literacy through training, and explain whether there are existing positive experiences of such approach in Guinea-Bissau.

CR5: Please clarify the existing land use in the planned project areas.

CR6: Please clarify how the ramps for livestock and domestic water supply (Output 2.1.4) would be managed after their construction. Please also elaborate on what is meant by the statement "NB. A large-scale project will be initiated in order to solve the deep problem linked to the development of livestock in the Northern and Eastern regions of the country which house more than 86% of head of cattle of Guinea Bissau." (p. 60).

CR7: Please quantify the expected benefits from the projects, whenever possible.

CR8: Please explain which alternative options to improve agricultural resilience in East Guinea-Bissau were considered and not chosen, and why.

CR9: Please elaborate on the institutional arrangement for managing fertilizer and pesticide inputs and agricultural equipment, during and beyond the project, and refer to existing examples of whether such a model has been shown to work in Guinea-Bissau.

CR10: Please clarify whether the project activities may result in displacement of any economic activities currently

	 being undertaken by community members in the planned intervention sites, and if yes how the project would address such displacement. CR11: Please explain how negative downstream impacts resulting from water retention structures can be avoided or minimized. CR12: Please clarify whether the project Steering Committee is planned to include representatives of the civil society, or if there are other ways in which civil society organizations can participate in project decision-making. CR13: Please clarify the supervisory role of BOAD as the implementing entity in section III.C. CR14: Please clarify how ex-post evaluation could be carried out 2-3 years after end of the project. How would the funding for it be managed?
	 CR15: Please clarify in the breakdown of the IE fee, whether it includes supervision of the M&E function. The final review found that while the proponent had addressed some of the clarification requests, others remained. Based on the information provided, one new clarification request was made, too. The proposal should clarify the environmental and social risk management arrangements in the project, taking into account the specific requirements of the unidentified subproject (USP) approach, and also specifically the risk of relocation of livelihoods activities as a consequence of the project, the risk of water retention structures limiting water availability downstream, as well as implementing entity role in environmental and social risk management; The project to be implemented by BOAD with financing of ca. US\$ 10 million from the Green Climate Fund, with focus on livestock resilience in the Northwest and Northeast of Guinea-Bissau should be explained in more detail, and synergies and lack of overlap with the proposed project should be elaborated; The sustainability of the institutional arrangement for managing fertilizer and pesticide inputs and agricultural equipment, during and beyond the project, should be elaborated, including the role of the
Date:	NGO and earlier experiences of such model in Guinea-Bissau 20 February 2017

Amended in November 2013



REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat 1818 H Street NW MSN P4-400 Washington, D.C., 20433 U.S.A Fax: +1 (202) 522-3240/5 Email: afbsec@adaptation-fund.org



PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category: Country/ies: Title of Project/Programme:

Type of Implementing Entity: Implementing Entity:

Executing Entity/ies:

Amount of Financing Requested:

Regular Guinea Bissau Scaling up climate-smart agriculture in East Guinea Bissau Regional West African Development Bank (BOAD) Regional Implementing Agency) General Direction of Environment/Secretariat of State of Environment and other Line Ministries 9,979,000.00 (in U.S Dollars Equivalent)

CONTEXT AND GENERAL FRAMEWORK OF THE PROJECT/PROGRAM

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic social, development and environmental context in which the project would operate



GEOGRAPHIC LOCALISATION

'Sectors', Figure 1: Administrative map of Guinea-Bissau Source: Wikipedia.

The Republic of Guinea Bissau is a West African coastal country with an area of 36,125 km2 with 78% of continental and 12% of island (Bijagos archipelago). Its population is estimated to 1.73 million. Located east of the Atlantic Ocean. it borders are Senegal to the North and the Republic of Guinea to the East and South. The country organized into 8 major administrative 'Regions', which further divide into 'Sections' and finally 'Tabancas' (villages) in decreasing levels of administration (Figure 1).

SOCIO-ECONOMIC CONTEXT

Guinea-Bissau have a population estimated to 1.73 million with a density of 47.8 habitants per km². Bissau is the capital of Guinea-Bissau and the main administrative center, with about one quarter of the population living there. The annual rate in population growth is 2.54%¹. Despite high urbanization in recent years still about 58% of the population lives in rural areas. The project region (Gabú and Bafatá 'regions') covers a total area of 15,131 km²,or 42% of Guinea-Bissau. Gabú with an area of 9,150 km² or 25% of the country is also the largest 'region' of all administrative regions.

The population of Guinea Bissau witch was 1 449 230 in 2009 will raise to 2 434 100 in 2030. The growth will be at least 68% of the population of 2009. In the project area (Gabù and Bafatà), the population will grow from 483191 people in 2016 to 682736 people in 2030 (see figure 2).

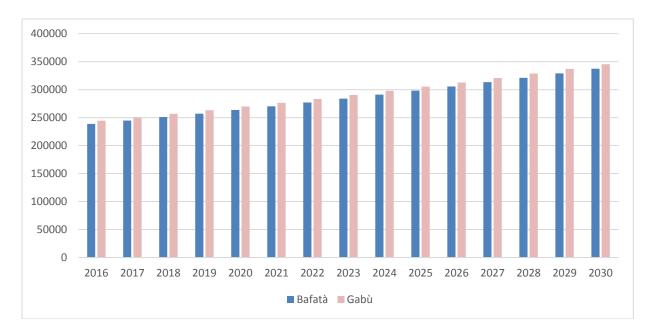


Figure 2: Growth of the population in the project area from 2016 to 2030 (Gabù and Bafatà)

The major socio-economic activities in the country lie is the exploitation of resources from agriculture, fisheries, forestry, livestock and mining extraction. Agriculture as primary economic sector of Guinea Bissau – alongside services – is largely based on subsistence farming, focusing predominantly on rice, cashew and livestock, employing 82% of the active population, generating 45% of GDP as well as the majority of exports receipts. The industrial sector is low in weight to the economy and focuses on the processing of cashew nuts.

It should be noted that, Guinea-Bissau is a Least Developed Country (LDC). The country has recently benefitted from considerable debt relief, which has helped the country to reduce its public debt to GDP ratio from a peak 113% of GDP end of 2009 to 28% of GDP by end of 2013 (IMF, 2014). While this has contributed to the stabilization of the economy with a GDP growth rate at

¹ Résultats de l'enquête approfondie sur la sécurité alimentaire et la vulnérabilité des ménages ruraux. République de Guinée Bissau, Mars 2011.

2.6 in 2014, 69% of the population continue to live below the poverty line, with 33% in conditions of 'extreme poverty' (<US\$1/day). The number of poor growth rate is estimated at 4.6%². GDP per capita is only US\$1,400. The gap between the average income of the poor and the poverty line, which expresses the depth of poverty is more pronounced in Guinea-Bissau (25.0%). Income inequalities between poor, that measure the severity of poverty, show that the poorest of the poor are more numerous in Guinea-Bissau (i.e. a rate of 12.4%)³. The majority of these populations poor reside in rural areas. It is in these rural areas that the project will intervene to help to reduce poverty and improve living conditions.

Guinea Bissau's health situation is equally characterized by low use of health services and vulnerability of populations, particularly mothers and children under 5 years. Life expectancy is low (50 years) and infant mortality rates are high. During the last severe cholera epidemic in 2005, about 25,000 cases were reported, mostly due to unsanitary conditions, resulting in 400 deaths by the national report on human development published by the United Nations (PNUD, 2008).

Food insecurity in Guinea Bissau is also common: despite high rice production, more than 30% need to be imported in order to cover the population's needs⁴. Other speculations such as vegetables, tubers, oilseeds, maize, etc. are imported to cover the needs of a growing population.

Food security is connected to world market transactions: in 2010, a strong rise in Thai rice prices (benchmark price for rice) from US\$380 to US\$495 due to heavy floodings in Thailand increased pressures on Guinea-Bissau's food supply. Climatic conditions also play an important role: low rainfalls in the beginning of the 2015 cropping season have led the World Food Program (WFP) to issue a warning on critical food security conditions for East Guinea-Bissau where, due to below average precipitation, cereal production could be expected to decrease by over 32% compared to the five-year average level (WFP, 2014). Currently 18% of children under 5 years are underweight, and the 3-year average prevalence of undernourishment is at 20% of the population (FAO, 2015). As a consequence, Guinea-Bissau's score on the Human Development Index (HDI) is 0.420 or place 178 out of a total of 188 countries (2014). This value is both significantly below average of the Human Development Report's 'Low Human Development Group' (0.493) and below the average of Sub-Saharan African countries (0.502) (UNDP, 2014). Fallow periods under slash-and-burn agriculture necessarily surpass those of alternative agricultural practices such as conservation agriculture, but currently land under fallow in Guinea-Bissau is often reused before a regeneration of soil fertility has occurred due to increasingly scarce land for food production (SEAT/DGA and Republic of Guinea-Bissau, 2011).

Guinea-Bissau has suffered from repeated, ongoing, political unrest in recent decades since independence in 1974, worsening already precarious economic and social conditions. Heads of state have been deposed or assassinated in repeat military skirmishes and coups, the most recent in 2009. The 2006 National Poverty Reduction Strategy Paper (PRSP) highlights government instability, mismanagement of public funds, structural constraints in the economy as key issues, including little diversification of income sources, low internal resource availability, weak human capital and lack of private sector dynamism. The PRSP's strategy focuses on a broad spectrum of issues to address these endemic problems, including instigating good governance, battling corruption, improving human rights, building institutional capacity and human resources, and increasing agricultural and fishing productivity alongside improving environmental protection. In

² BECEAO, Report on the situation of poverty in UEMOA countries, 2012

³ BECEAO, Report on the situation of poverty in UEMOA countries, 2012

⁴ Trade in the cashews and rice: Implications for food security, joint Mission of the Ministry of Agriculture and Rural Development (MARD), the Organization for food and Agriculture of the United Nations (FAO) and the United Nations World Food Programme (WFP), Principal Report. P. 6

addition, the PRSP points to an increasing involvement of well-informed NGOs and participation of a strong civil society, which can be mobilized to improve social and economic conditions. However, following the 2009 coup d'état political stability has been considerably strengthened, particularly after the successful elections early 2014. This has led to renewed donor presence in the country and successful regional bond issuance, among other.

FOOD INSECURITY

The analysis of the evolution of the grain production shows that it follows a variable trend with an average growth rate of just 1% over the last decade (according to figures of the Ministry of agriculture). This grain growth is much lower than the population growth, which is 2.5%. As a result, grain production is insufficient to cover the food needs of the country estimated at 175 kg including 129,9 kg of rice per year and per person. The coverage rate of the grain needs of the country by national production was only about 58% over the period 2000-2010, compared to 72% on the period 1992-1997 reflecting a sharp decline of domestic production. Assuming the annual growth rate of grain production, which is 1% and the rate of population growth which is 2.5%, the coverage of the country's grain needs will be 40% in 2030 and that of rice by 35 percent (figure 3). The cereal deficit will be 253 168 tonnes including 238 373 tons of rice. The situation is going to get worse. But rice is not only the most widely grown cereal (75% of total grain production) but also the most consumed in Guinea-Bissau. Rice is consumed by about 90% of the households in Guinea-Bissau



The figure above shows that the gap between production in rice or other cereals is widening more. However the rice deficit remains very high (see following figure). As a staple of more than 90 percent of the population, its impact on food security and the welfare of households will be strong.

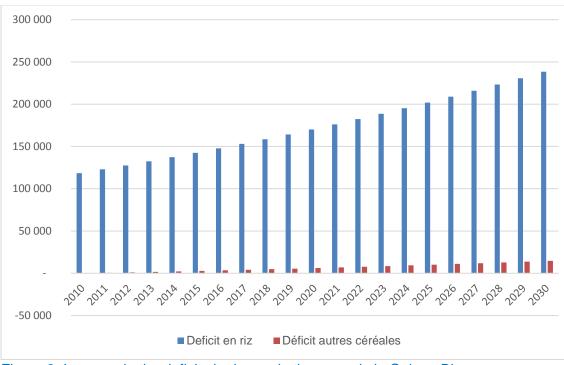


Figure 3: Increase in the deficits in rice and other cereals in Guinea Bissau

These recurring deficits makes the population highly dependent on market during the lean season from May to October (figure 5) before the new harvest from October to January. About 76% of the households depend on markets for access to rice during the peak of the lean season (August) against 40% in November, 28% in December and 27% in January. The dependence on the market increases as one moves away from the harvest time and strengthens food insecurity.

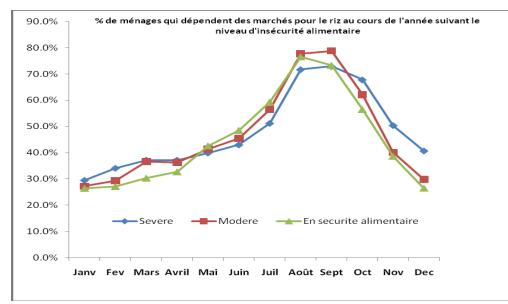
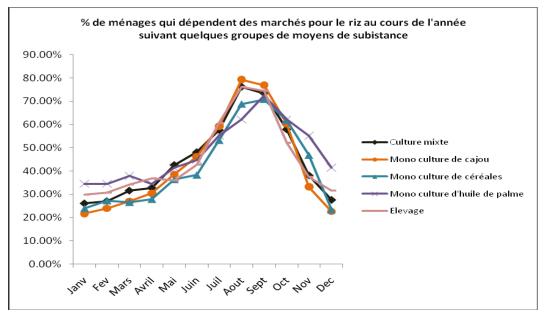


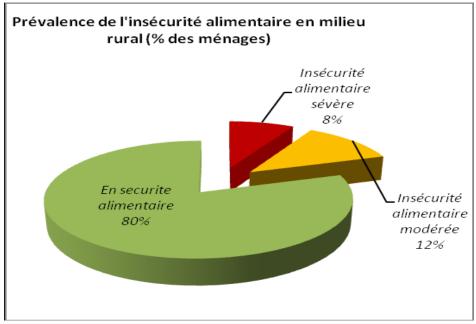
Figure 4: Evolution of the dependence of households in markets for rice during the year <u>Source</u>: Results of the survey on food security and vulnerability of rural households. The Republic of Guinea Bissau, March 2011.

This situation is common to all households regardless of their level of food insecurity or their livelihood (figure 9).





Also, 20% on average, rural households are affected by food insecurity 8% affected by severe food insecurity, and 12% by moderate food insecurity (figure 7).





Source: Results of the survey on food security and vulnerability of rural households. The Republic of Guinea Bissau, March 2011.

In the project area, moderate food insecurity affects 11 percent of the population in Bafata and 12% to Gabu. In both regions, 3% of the population are affected by severe food insecurity. These rates hide the depth of food insecurity within the villages where poor rural people to over 70%, are forced to obtain most of their food on the market between May and October. The question is even more worrying when it comes to household kept by women. The rate of severe and moderate food insecurity is significantly higher among households headed by a woman (27.6% including 13.8% of severe food insecurity) than among households headed by a man (19.5% whose 7.3% of severe food insecurity). The majority of the heads of households women (61.9%) consisting of widows. With respect to the level of education of the household head, noted that the rate of food insecurity is significantly higher for households without education (23% with 10% of severe food insecurity) among households in which the head can read and write (16.3% including 4.7% severe).

The average share of food in total spending is 53% for food insecure populations while the share of rice in food spending expenditures represents 52.3% for people in severe food insecurity and 29% for populations in moderate food insecurity (see table below).

Household characteristics		Food insecurity				
		Severe (%)	Moderate (%)	Severe and moderate (%)		
Sex of household head	Woman	13.8	13.8	27.6		
Sex of household head	Man	7.3	12.2	19.5		
The head of household can read	Yes	4.7	11.6	16.3		
and write	No	10.1	12.9	23.0		
The average share of food in total expenses		52.0	53.9	53		
Share of rice in food expenditures expenditures		52.3	29.7	46.0		

Table 1: Socio-economic characteristics of households in relation to food insecurity

To deal with the precarious food situation, households are appeal to a number of survival strategies for their food. Some of these strategies can improve short-term food security of the household but may be long-term negative. The investigation on food security and vulnerability of rural households reveals that the reduction in the quantities consumed by adults including youth for the benefit of the children is the most used strategy by the Bissau Guinean rural households. Also, the use of one such form of strategy contributes to weakening the adult members of the household and reduce accordingly their ability to procure food. Less preferred food consumption is also very intense. The other strategies are: (i) reduction of the amount of food eaten during the meal; (ii) the reduction in the number of meals per day; and (iii) dependent on the help of family or friends (see table below).

survival strategies	In food insecurity		In food security	Total	
	Severe	Moderate			
Consumption of least favorite food	78.6%	57.5%	57.2%	59.0%	
Dependence of the help of family or friends	67.2%	49.3%	51.2%	52.3%	
Reduction of the food quantities consumed during meals	69.8%	51.7%	51.6%	53.1%	
Reduction of the quantity of food consumed by adults for the benefit of children	72.1%	55.2%	59.6%	60.1%	
Reduction of the number of meals per day	66.0%	50.7%	51.4%	52.5%	

Table 2: Survival strategies developed by households

Source: Results of the survey on food security and vulnerability of rural households. The Republic of Guinea Bissau, March 2011.

These strategies not only to plunge people into a vicious circle where poverty and food insecurity are mutually reinforcing but show that there are real difficulties of access to food in Bissau Guinean rural and especially during the lean period.

The situation worsens over the years due to climate shocks including floods and droughts/irregularity of heavily rains affecting production. About 32% of rural households have cited drought / irregularity of rains and 33% cited flooding as the main shocks affecting agricultural production in recent years thereby exacerbating food insecurity. These shocks are: (i) the lack of mobilization of water for irrigation although it is available; (ii) damage related to very recurring Bush fires, (iii) bad agricultural practices and soil degradation; (iv) the plant disease and; (v) the increase in the prices of commodities food corollary of low production. More than one household in two (54%) in severe food insecurity or moderate said the rising prices of food as one of the most important shocks that have affected their food situation.

SOIL AND LAND USE

In the Republic of Guinea-Bissau, land is the property of the State and the common heritage of all persons. Land, as the basic physical support of the community, has eminently national value irrespective of the form of its use and exploitation. Improvements in the field may be public or private (Article 2 of the Law (Lei n°5/98 de 23 de Abril) on the land use). See annex 12.

In Guinea-Bissau the following types of soil are distinguished: Ferralsoils, Plintosoils, sandysoils, hydromorphicsoils and other types of substrate (Bouali, mud and sands). In the table below, the area occupied and percentage occupancy for each soil type is shown.

		%
Soil types	Area (Ha)	occupation
1 - Ferralsoils (Ferralítics and Fersialítics)	1 960 000	62
2 - Plinthosoils (Litolics and Litosoils)	550 000	17
3 - Sandysoils (Regosoils psamitic)	20 000	1
4 - Hidromírtic Soils:	650 000	20
4.1 - Gleisoils (Continental)	150 000	5
4.2 - Riverine (Derived from marine alluvium)	500 000	15
4.2.1 - Tropical polders	100 000	3
4.2.2 - Halo - hydromorphic	400 000	12

Table 3: Types of soil, surface and % of occupancy (adapted).

Source: Second National Communication on Climate Change in Guinea-Bissau, 2011

The landscape of Guinea-Bissau comprises lowland coastal plains and mangrove swamps, which to the inland East give way to a savannah woodlands (deciduous) region, where this project ('regions' of Gabú and Bafatá) is to develop its activities. Tree growth in the savannah forest is limited mostly to the proximity to (perennial) streams and hillsides. Forest fires, either induced (slash-and-burn agriculture) or due to high temperatures and low rainfalls, occur frequently in the East, with an average fire density of 1.3 to 2.3 fires per km² per year, but on occasion up to 3.0 to 7,6 (World Bank, 2015).

The following figure shows the density of bush fires in different regions of Guinea Bissau.

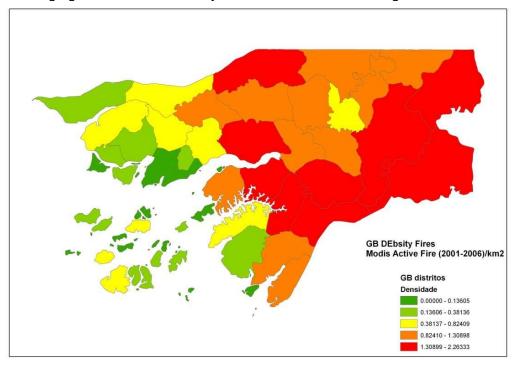


Figure 7: Density of fires in Guinea-Bissau, based on the composition of the images daily MODIS satellite between 2001-2006, adapted from the Project CARBOVEG-GB (2007)

Ferrasoils and Lixisoils are the primary agricultural soils in the region. These are less productive than those found in rice cultivation in the country's flooded lowlands.

As of today, over 70% of Guinea Bissau is still forested, 45% of which primary forest. Guinea-Bissau's forests constitute an important carbon stock for West Africa: the total forest aboveground biomass (ABG) carbon stock in the region has been estimated at 96.93 Mt, with a mean forest AGB value of 65.17 Mg per hectare. Savannah woodlands in East Guinea-Bissau show lower average AGBs (Carreiras et al., 2012), but are important for conservation because of their spatial extension over the national territory (15,035 km² or 42%). The country is home to 620 species of amphibians, birds, mammals and reptiles (0.8% of which endemic) and over 1,000 species of vascular plants (1.2% endemic). In 2013, 61 species were considered as 'threatened species' under the IUCN Red List. Twelve species in this list (20%) are native species to Guinea-Bissau (IUCN, 2015).

In the rural parts of Gabú and Bafatá regions, pastoralists and small-scale farmers of different ethnics (Fula, Mandinga, other) have settled in the forest savannah thousands years ago, relying on shifting cultivation of sorghum, millet, maize, peanuts and sometimes rice and cattle raising (for milk as component of their diet). Cashew nuts are the main cash crop for >80% of rural households, which is either sold to traders or exchanged directly for rice when own rice stocks are low or production fails. Although permanent agriculture has increased in the region (Temudo et al., 2014), overgrazing, deforestation (annual rate at 1%) and soil erosion (especially under shifting cultivation) continue to exert pressure on regional ecosystems.

Itinerant slash-and-burn agriculture poses a substantial risk for sustainable land management in both Gabú and Bafatá regions. Fula and Mandinga, which are the most important ethnicities in absolute numbers in those 'Regions', routinely practice slash-and-burn agriculture to clear land for staple food production (sorghum, millet, corn or rice); but this practice is directly linked to ongoing land degradation, loss of soil nutrients and drying up of springs, and affects the resilience of their cropping systems. In this context, promising market development for cashew nuts in the past two decades has led to an intensification of slash-and-burn practices in the project region as many farmers decided to participate in the commodity boom and clear forests near their villages to make room for cashew agroforests that show lower biodiversity compared to the traditional mix of croplands, fallows and forests. More recently, slash-and-burn agriculture is now used to clear older cashew orchards for cereal production in order to guarantee food production and security (Temudo and Abrantes, 2014, 2013). Otherwise, modern agricultural practices such as small-scale irrigation or animal traction for preparing soils are little disseminated.



Figure 8: Burning practiced by farmers to prepare fields in the project area



Figure 9: Field prepared with the practice of slash and burn



Figure 10: Burning fire entering the forest



Figure 11: Forest destroyed by the bushfires in the project area

Source : Global Lead, Sites works

Itinerant slash and burn agriculture (see figure above), hunting practices, honey and palm wine, extraction etc. cause bush fires with significant degradation of soil and destruction of forests. This results in shrinking the carbon sinks that are the forests and soils, reducing infiltatration of rainwater with the corollary, soil erosion acceleration, flooding farmland in the rainy season, filling rivers and shallowss by mud and sand (see figures below), draining soils in the dry season and the unavailability of water for irrigation.



Figure 12: Filling a river with mud and sand Source :

d sand <u>Figure 13</u>: Filling of arable land by sand <u>Source</u> : Global Lead, Sites works

HYDROLOGICAL NETWORK

The country's hydrological network is large and complex, comprising rainwater resources, surface-water resources and underground-water resources, with significant stationary water bodies including lakes (such as the 35,000 ha Lake Cufada), inland valley depressions (*basfonds*), temporary water bodies (*vendus*) in the east, and aquifers. However, water access continues to be a main limiting factor for agricultural development in Guinea-Bissau's east region:

tidal saline intrusion up to 175 km inland introduces salt water into aguifers which causes problems during dry season if extraction exceeds recharge rates. The low altitude of most parts of the country increases the risk of flood events near watercourses and coastal areas, particularly during and following the rainy seasons. Drainage in the interior of the country is problematic due to the limited permeability of many soils, exacerbating impacts of floods. Uses of perennial water courses are also very important to populations, but few freshwater courses in Guinea-Bissau are perennial, leading populations to rely on groundwater resources during the dry seasons. One exception is the Corubal river, the principal national surface water resource with average annual water volume of 130bn m³, whose rocky estuarine threshold protects the river from saline intrusion. However, the discharge rate of the Corubal is strongly seasonal, with its low at 8 m³/s in May (before rainy season) and 1,120 m3/s in September (end of rainy season). A second exception is the considerably smaller Geba river (annual water volume of 0.8bn m³) in eastern Guinea Bissau. However, the Geba suffers from water extraction upstream in Senegal for irrigation and further diverting due to dam construction, essentially rendering available dry-season volumes half of this total, exacerbating saline intrusion and threatening agriculture in east Guinea-Bissau. Both watercourses of the Corubal and Geba rivers follow through the project region.

It should also be noted that agricultural practices, the destruction of forests have strongly affected surface water resources by accentuating the phenomenon of erosion with result the silting up of watercourses in the area.

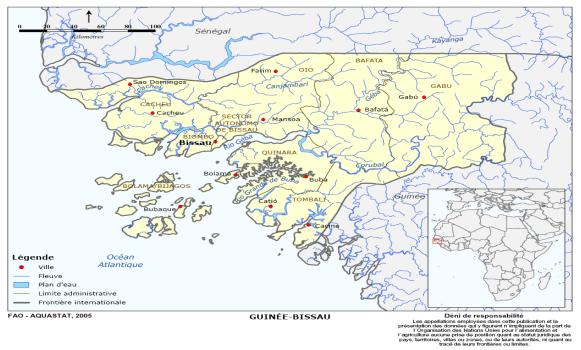


Figure 14: Surface Water network of Guinea-Bissau

Although the country has a major water system, the forests degradation reduces the retention capacity of the water by the soil and the forests. Reduction of forests and land degradation therefore reduce water infiltration into the soil with the consequent which is the unavailability of water to regulate rivers in dry season. In addition, heavy rains caused by climatic disturbances cause flooding. The result is a silting up and early drying up of the lowlands and watercourses, thus reducing the productive qualities of the soil.



Figure 16: Shallows flooded wells dried up early in Figure 17: Parched agricultural soil suffering water the project area and wind erosion Source : Global Lead, Sites works

FOREST, BIODIVESITY AND PROTECTED AREA OF GUINEA BISSAU

As of today, over 70% of Guinea Bissau is still forested, 45% of which primary forest. Guinea-Bissau's forests constitute an important carbon stock for West Africa: the total forest aboveground biomass (AGB) carbon stock in the region has been estimated at 96.93 Mt, with a mean forest AGB value of 65.17 Mg per hectare. Savannah woodlands in East Guinea-Bissau show lower average AGBs (Carreiras et al., 2012), but are important for conservation because of their spatial extension over the national territory (15,035 km² or 42%). The country is home to 620 species of amphibians, birds, mammals and reptiles (0.8% of which endemic) and over 1,000 species of vascular plants (1.2% endemic). In 2013, 61 species were considered as 'threatened species' under the IUCN Red List. Twelve species in this list (20%) are native species to Guinea-Bissau (IUCN, 2015).

Guinea-Bissau currently has a network of six protected areas that occupy about 12.2% of the national territory.

The National Park of Orango (PNO): It is located in the south of the Bolama Bijagos archipelago in Guinea Bissau. It is one of the central areas of the Biosphere Reserve. It was created in 2000

by the Decree-Law No 11/2000 of 4 December 2000. Its area is 158,235 ha, of which 64 000 ha land. The terrestrial part is dominated by the oil palm (Elaeis guineensis), coastal shrublands and intertidal sand banks. The fauna is diverse and abundant. There are hippos (Hippopotamus amphibius) and crocodiles (Crocodylus niloticus and (Osteolaemus tetraspis). The presence is noted from 5 species of marine turtles including green sea turtles (Chelonia mydas), hawksbill (Eretmochelys imbricata), turtles olive ridley (Lepidochelys olivacea), loggerhead turtle (Caretta caretta) and leatherback turtles (Dermochelys coriacea). We also note the presence of the bushbuck (Tragelaphus scriptus), vervet (Cercopithecus aethiops), the humpback dolphin (Sousa teuzsii) and the bottlenose dolphin (Tursiops truncates). This park is home to the manatee (Trichechus senegalensis), a threatened species in the world, the gray parrot (Psittacus erithacus) species rare and endangered in the region.

The Natural Park of "Tarrafes" do Rio Cacheu (PNTC): It is created by the Decree No. 12/2000 of 4 December 2000 and located in the northwest of Guinea-Bissau, in the administrative region of Cacheu. It covers an area of 88,615 ha, of which 68% are covered by mangroves. Thanks to its area, it is considered the largest continuous block of mangrove forest in West Africa. The mangrove is home to many migratory birds. Regarding mammals, we note the presence of bottlenose dolphin (Tursiops truncates) and humpback dolphin (Sousa teuszi). We also note the presence of hippopotamus (Hippopotamus amphibius), manatee (Trichechus senegalensis), and green monkeys (Cercopithecus aethiops) and harnessed Guib (Tragelaphus scriptus). Regarding reptiles we find crocodiles (Crocodylus niloticus).

The Natural Park of the Lakes Cufada (NCCP): It is established by Decree-Law No 13/2000, of December 4 and is located south of Guinea-Bissau, in the administrative region of Quinara. With an area of 89,000 hectares, this protected area is the largest fresh water reserve in the country. It is a Ramsar site since 1990 because of its importance from the point of view of the birdlife, including 203 migratory bird species have been reported. Note the presence of White Pelicans (Pelecanus rufescens) and others from Europe and the Arctic. The fish fauna including tilapia is very important for local people. Large mammals are also present in lakes, including the buffalo (Syncerus caffer). Hippos (Hippopotamus amphibius) are also present. It was identified 54 species of mammals and 11 species of reptiles. Concerning flora, there are 615 species of vascular plants including 577 species of Angiosperms and 8 species of pteridophytes.

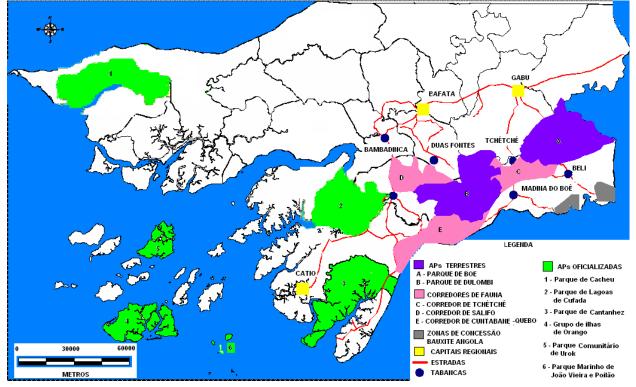
The National Park João Vieira-Poilão (PNMJVP): It is established by Decree-Law No. 6-A / 2000 of 23 August 2000 and is located southeast of the Bijagos Archipelago. It has an area of 49 500 ha. Three species of sea turtles frequent the beaches of the park (the green turtle, hawksbill and olive ridley). The islands are home to sub-humid Guinean forests. Elaeis guineensis palm grove is the dominant plant formation. It is associated with other tree species, shrub and herbaceous. The mangrove is in the intertidal zone. These islands are the most important area for the reproduction of marine turtles in the West of Africa (it is estimated that in 2001 there were laying between 7000-30000 eggs per year for green turtles (Chelonia mydas).

Community Marine Protected Area of Formosa Islands, Nago and Chedia (AMPComplexe UROK). It is created by Decree-Law No 9/2005 of 12 July 2005 and is located north of the archipelago of Bijagos covering an area of 54,500 ha. The group of these islands is part of the central zone of the Biosphere Reserve. The largest area is occupied by mangroves. sand benches and vases, and the many channels with shallow waters, are critical habitats for reproduction and growth of many species of fish and crustaceans. Formosa island group is the most important place of the archipelago for avifauna, making him the second most important site for migratory birds of the West Africa. It is in this environment that we find the large number of animals important from the perspective of biodiversity conservation, including manatees (Trichechus senegalensis),

hippopotamus (Hippopotamus amphibius), crocodiles (Crocodylus niloticus and Osteolaemus tetraspis), turtles (Chelonia mydas and Eretmochelys imbricata), otters (Aonyx capensis), dolphins (Sousa teuszii and Tursiops truncates).

The National Park Matas Cantanhez (PNC). It is located in the southwest of the country and has an area of 105,767 ha. The sub-tropical rainforest is the dominant and is the last vestige of this training in Guinea-Bissau. The vast expanse of mangrove favors the cultivation of rice, why Tombali region is considered the country's breadbasket. The park is a very important game, including the chimpanzee (Pan Troglodytes verus), despite its rapid decline in Africa. It also counts the buffalo (Syncerus caffer nanus), the roan antelope (Hippotragus equinus), black and white colobus (Colobus polycomos) which is rare, and Colobus badius. Among the species of sub rainforest encountered include, Sougué (Parinari excelsa) Eyoun (Dialium guineense) and Emien (Alstonia congensis).

Although the biological diversity of Guinea Bissau is important, it is now highly threatened. The main causes are, among others: (i) poor agricultural practices (shifting cultivation practiced at the national level made through the clearing of vegetation, bushfires, ect); (li) logging, sometimes beyond the control of the competent authorities; (lii) the degradation of natural formations due to the destruction of soil structure, water and wind erosion and poor land use; (Iv) poverty is gaining more and more ground and forcing the population to survive, to use natural resources unsustainably. These protected areas are not located in the project area at Bafata and Gabu. There is animal's corridors in the south of these regions. However, the project sites don't have communication with the said corridors. The implementation of the project do not affect protected areas and corridors of animals. The following map shows the location of the protected areas of Guinea Bissau and the corridors of animals.





CLIMATE CHANGE AND VULNERABILITY IN WEST AFRICA AND GUINEA BISSAU

Climate variability and change

Guinea-Bissau has a typical hot, humid monsoon-like tropical climate, with two well-defined seasons. The rainy season is from mid-May to mid-November, with the dry season occupying the rest of the year. May and November are transition months between both seasons. Average temperatures in the rainy season range from 26°C to 28°C (30.5°C in April and begin of May), but are lower at <24°C during dry season when harmattan (dusty winds) may blow in from the Sahara. The coldest months of the year are December and January. Rainfall varies greatly regionally and seasonally, with overall rainfall reaching up to >1,800mm in the country's southern provinces, but only <1,200mm in the east. Historical observations show July and August as the rainiest months in Guinea-Bissau. Major droughts occurred in 1977, 1979, 1980, 1983, 2002, 2004 and 2013. The drought of 2002 affected an estimated 100,000 people which is more than any other climate-related disaster (including epidemics) between 1980 and 2010. High tides and torrential rainfalls in 2003, 2004 and 2005 destroyed makeshift housing and bridges in east Guinea-Bissau, forcing family farmers to abandon their houses (some permanently) and causing severe harvest losses. Floods of Geba and Corubal rivers' tributaries are particularly relevant in this respect (World Bank, 2015).

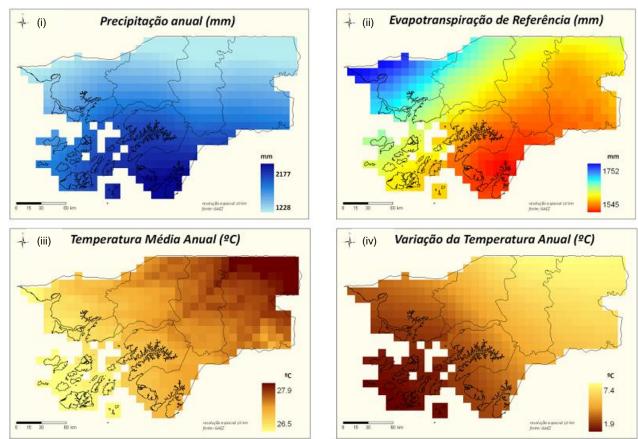
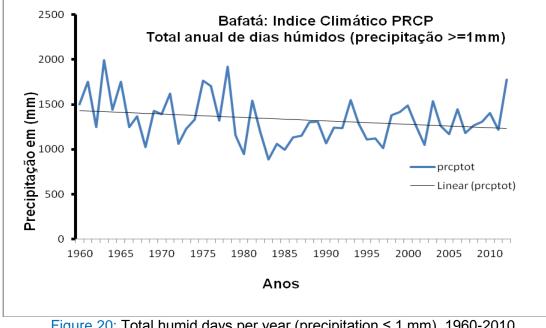


Figure 19: Climate in Guinea-Bissau: annual precipitation (mm) (i), reference evapotranspiration (mm) (ii), average annual temperatures (°C) (iii) and intra-annual temperature variations (iv), from upper left to lower right.

Source: SEAT/DGA (2013).

In comparison to other 'regions', Gabú and Bafatá show considerably (i) lower rainfalls, (ii) lower evapotranspiration, (iii) higher temperatures and (iv) higher intra-annual temperature variability (Figure 20) (SEAT/DGA, 2013). Average high temperature between 1981 and 2010 at Bafatá Station (main observation unit for East Guinea-Bissau) was at 34.6°C (30,9°C to 39,3°C) and average low temperature at 20.5°C (16,0°C to 23,2°C). For the same time period, average precipitation ranged between 1000mm to 1500mm, with ~80% of the rainfalls concentrated in the monsoon months of July, August and September. During the dry December to March months average monthly rainfalls fall to 0,0mm.



<u>Figure 20</u>: Total humid days per year (precipitation ≤ 1 mm), 1960-2010 <u>Source:</u> INM-GB (2014)

According to data from Guinea-Bissau's National Meteorology Institute (INM-GB, 2014), several important changes in rainfall/humidity levels have been observed in the past decades. While the rainy season during the 1960s to 1970s usually started in the second half of May, observations now point at a later starting point in the month of June. There has also been a reduction in the total number of humid days per year: annual total wet-day precipitation (PRCPTOT) (precipitation \geq 1 mm/day) shows a linear declining trend between 1961 and 2010 from ~1,500mm annual to ~1,250mm (Figure 21). This trend is indicative of a drier climate, and, most importantly, a higher susceptibility to drought in the region. These findings are confirmed by independent long-term (20 years) ethnographic studies in the project region: as related in Temudo and Abrantes (2014), family farmers find that more frequent poor cereal harvests are increasingly caused by a higher rainfall variability, particularly through longer dry spells. Higher frequency in pest and disease occurrence, as well as destructions of swamp rice field dykes by unusually high tidal waves are also observed by farmers in the region (Temudo and Abrantes, 2014).

The recent IPCC AR5 chapter on Africa (Niang et al., 2014) finds that current changes in mean annual temperatures and precipitation will continue to show effect over the whole African continent, independent of low RCP2.6 or high RCP8.5 emission trajectories, with climatic change on the continent to occur at a faster speed than anywhere else on the globe. In general, temperature projections for West Africa show a mean +3°C to +6°C increase until 2100 above the late 20th century baseline, with RCP4.5 at the lower range and RCP8.5 at the upper range (Niang

et al., 2014). For the mid-century (2031–2060) mean warming is expected to reach of +2.8°C compared to 1961–1990 (Thornton et al., 2015). Unprecedented climatic conditions may occur both in the Sahel and tropical West Africa as early as 2040. The high level of uncertainty regarding these projections is largely due to low to medium confidence in the robustness of computed future rainfall change, both in amplitude and direction of precipitation signals. Based on earlier CMIP3 GCMs projections, extreme rainfalls over West Africa and the Sahel zone nevertheless would increase until end of the 21st century (low to medium confidence). Of particular relevance is that Guinea-Bissau's highlands in the East may experience a higher number of days with extreme rainfalls in the monsoon season (Niang et al., 2014).

In general, higher temperatures and a higher frequency of droughts and floods will likely to become more important in the future. Water resources in dry regions such as Guinea-Bissau may be strongly affected by overall rainfall reductions due to higher than average surface drainage sensitivity. There is also evidence for a potential southward shift of the Sahel, Sudan, and Guinean savannah vegetation zones with potentially adverse consequences for the region (Niang et al., 2014). For example, projected changes in potential evapotranspiration (PET) and negative rainfall anomalies for the western Sahel might cause a virtual elimination of the region's growing season by 2041–2060. The western Guinean coastal region itself may suffer a 20% decrease in growing season days, differently to other parts of Africa where increases up to 5-15% can be expected (Cook and Vizy, 2012).

> Curent vulnerability to Climate Change

Vulnerability to climate change depends on exposure of social systems (e.g. family farmers) or natural systems (e.g. ecosystems) to climatic events, their sensitivity to the (expected) impacts, and their capacity to respond and recuperate after an impact has occurred. These three dimensions – exposure, sensitivity and adaptive capacity – are formed not only by the magnitude and frequency of current or future climatic variability, but also a variety of factors that affect human systems, such as water access, infrastructure, political stability, market access, prices, availability health services etc. (Eakin et al., 2014; IPCC, 2014a; UNFCCC, 2010).

In this context, Guinea-Bissau's National Adaptation Programme of Action (NAPA) (Republic of Guinea-Bissau, 2006) identified the agricultural sector as the most vulnerable to climate change for a number of reasons: it is the dominant component of the GDP, the livelihood for a majority of the poor population depends on agriculture, with climatic change potentially causing significant damage to the sector. With decreases experienced in the duration of the rainy season (now limited to 5 months) and the overall volume of rain having led to a decline in production often associated with water shortage, acute droughts are identified as the most significant risk. However, increased winds and intense rainfall may also lead to loss of production (and stored crops) as well as periodic localized floods, either through destruction of dykes and rice fields or salinity intrusion from the sea. A reduction in the duration of cold periods may exacerbate heat stress on plants and animals. The NAPA further estimates that there has been a 20–30% fall in agricultural production with one third of the population of Guinea-Bissau being threatened by food insecurity. The shortfall in national cereal production, predominantly rice, is expected to rise to 75,000 tons per year, which would increase the need for imports.

Recent scientific evidence from the IPCC AR5 (IPCC, 2014b, 2014c) and other studies confirms this assessment for the West African region, and Guinea-Bissau in particular. Subsistence agriculture and food security are directly vulnerable due to both future, but also existing climatic and non-climatic stressors, such as existing lack of inputs (e.g. lack of irrigation or fertilizer

application), infrastructure deficits and weak services. In assessing African corn yield data from 1961 to 2010, Shi and Tao (2014) find that a 1°C average temperature increase reduced corn productivity by >10% for 8 African countries, including Guinea-Bissau. Furthermore, droughts tended to worsen these impacts: a 0.5 decrease in the standardized precipitation evapotranspiration index (SPEI) led to >30% losses in 32 African countries, with Guinea-Bissau again included (Shi and Tao, 2014). Temperature increases may also reduce crop cycle duration and create higher water stress for plants due to higher evapotranspiration demand, with PET also being a primary constraint on corn water usage in Guinea-Bissau (Estes et al., 2014).

Future median losses in crop yields are estimated at an average -13% for Guinea-Bissau, caused mainly by drier and warmer climate in northern West Africa. Importantly, potentially positive feedback effects for crop yield because a of higher CO₂ fertilization effect may not contribute to higher food security as many West African staple crops (corn, millet, sorghum, with the exception of rice) are C₄ crops which are less sensitive to higher CO2 concentrations (Roudier et al., 2011). Another recent study projects a decline in sorohum yields in the order of 16–20% by 2031–2060. with agricultural output becoming more and more affected as temperatures increase (Sultan et al., 2014). Potentially higher rainfalls would have only limited impacts under these scenarios: already under a >2°C warming scenario any potentially positive effect on millet and sorghum yields would be cancelled out (Thornton et al., 2015). Livestock is also extremely vulnerable to climate change: under a RCP8.5 high emission scenario Aboveground Net Primary Productivity (ANPP) of the Guinea-Bissau's rangelands could decrease by a mean -87.9% until the 2050s, compared to a 1971–1990 baseline. In fact, of all African countries, only Gambia is projected to suffer higher losses in ANPP, which is closely linked to the profitability and productivity of pasture (Thornton et al., 2015). The incidence of crop and animal diseases or pests is also to be affected by a warming climate, as are climate-related damages to essential infrastructure (roads, storage, communication, electricity supply, etc.) and services (health, etc.), putting considerable additional risks on food security and agricultural production (Niang et al., 2014; Porter et al., 2014).

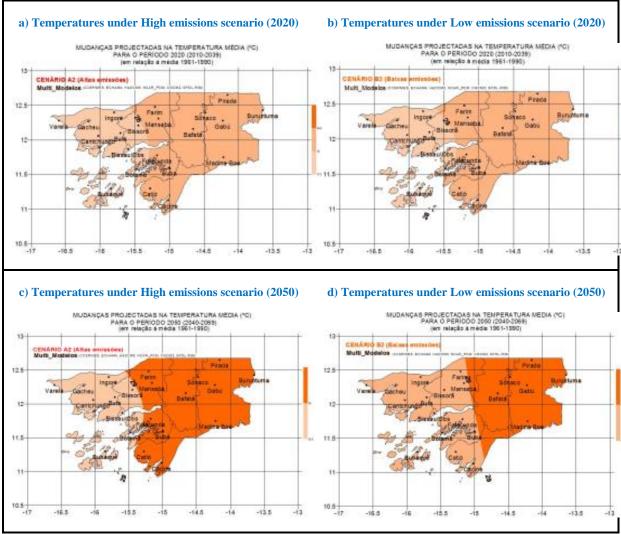
Further reasons for concern relates to climate change impacts on biodiversity, health, civil conflict and economic costs in the region. Habitat loss, environmental degradation and unsustainable agricultural practices already affect biodiversity and species in West Africa, but under increasing climatic stress amphibians in particular could become very vulnerable in semi-arid Guinea-Bissau (Carr et al, 2014). Higher rainfalls may make cholera collect more frequent in Africa, particularly where it is already endemic (Niang et al., 2014); This again includes Guinea-Bissau. There may also be a link between climatic changes and political stability: Burke and al. (2009) find a significant relationship between the occurrence of armed conflict in sub-Saharan Africa and increasing temperatures. This implies that warmer years would also increase the likelihood of civil conflict. Guinea-Bissau's coup d ' état of 1998 has been specifically mentioned in this context (Solow, 2013). Finally, the economic damages caused by climatic change may be huge the national economy: according to a 2013 vulnerability assessment by Verisk Maplecroft (2013) Guinea-Bissau's economy is very vulnerable to economic output losses, second only to Bangladesh at global level.

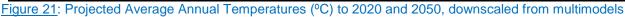
Climate change projection

Several climate models conducted at the national level generally predict a darkened future for the country⁵. These models, developed through the NCCCC and NAPA processes, suggest increased climate variability and climate-change-related shifts in temperature and rainfall in the future in Guinea-Bissau both in the short and long term.

⁵ These models are ECHAM4, HADCM3, NCAR_PCM, CGCM2, GFDL-R30

Regarding temperatures, in the short term, ie by 2020, changes are already expected. Data from the country's Second National Communication on Climate Change (SNCCC)⁶ reports that both high and low emissions scenarios for climate models downscaled to Guinea-Bissau predict the average temperature to increase by about 1.0°C to 2020 under the different IPCC scenarios in relation to the average temperatures established for the period 1960-1991 (see Fig 6a high emissions scenario and 6b low emissions scenario). All models predict year increase in national average temperatures of between 1.8 ° C and 3.3 ° C for the lowest and highest emission scenarios respectively, relative to 1961-1990 figures (see Figure a and Figure b)⁷.





Regarding rainfall, in by 2020, impacts on rainfall are more uncertain: most of the models expect precipitation to increase across the nation by 3.7-3.8% under future emissions scenarios,

⁶ The country's third National Communication on Climate Change is currently in preparation.

⁷ It should be noted that global emissions are currently higher than those assumed in the highest emission scenario, with implications for temperature increases to be towards, or potentially above, the higher emissions scenarios of the IPCC Fourth Assessment Report.

although one model shows a decrease in average annual precipitation by 2% (CSIRO) (see Figure 6a and Figure 6b; CSIRO model not shown). However, all the scenarios forecast irregularity in rainfall patterns implying challenges to existing agricultural practice. At the long term, by 2050, most global and regional models predict that the average of the annual rainfall in West Africa will increase by 3.8 - 4.1% in relation to 1961-1990 levels (see Figure 6 and Figure 6 d c), with the notable exception of the CSIRO model, which predicts up to 3.5% decrease in rainfall.

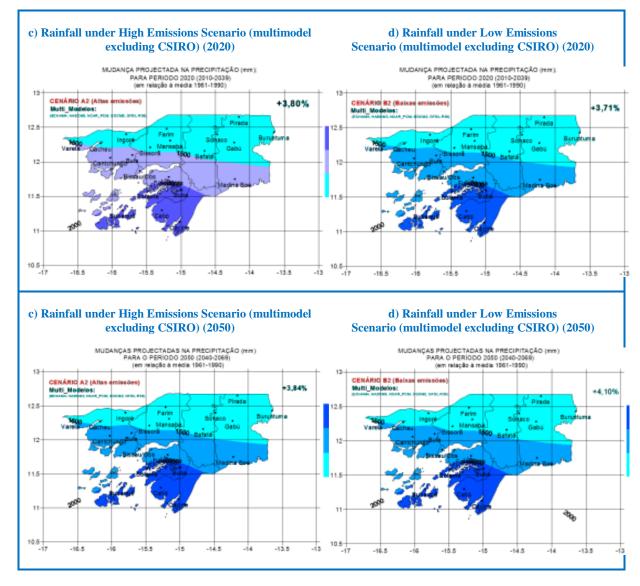


Figure 22: Projected Average Annual Precipitation to 2020 and 2050 downscaled from multimodels

It is important to note the observed precipitation patterns to date have shown a decline in precipitation, whilst most of these models show an increase in precipitation (except for the CSIRO model).

> Future vulnerability of surface water resources

Water resources of Guinea Bissau remain vulnerable to the effects of climtaique change. Datas indicate that the rivers will experience a rate reduction exceeding 50% of the current average in places. This phenomenon of reduction will be common to all parts of the country but very marked for those on the 10th parallel north, which includes upstream of the Niger watershed. It is therefore anticipated that from 2050 to 2100, the rate of decline the Niger watershed in Guinea Bissau from 16 to 28% to the sensitivity of 2.5 ° C and 23-54% sensitivity 4.5 ° C. The main tributaries of the Niger watershed in Guinea Bissau undergo phenomena related firstly to the loss of vegetation cover and soil moisture and secondly to increased water erosion by rainwater and destruction of gallery forests.

	2000	2025	2050	2075	2100
Streams and station	sensitivity 1,5°C				
Milo ; Kankan	-2,27	-8,24	-18,25	-30,42	-43,72
Niger; Kouroussa	-1,49	-5,32	-11,79	-20,18	-29,91
Niandan; Baro	-0,82	-2,90	-6,48	-11,22	-17,17
Konkouré; Pt Télémélé	-1,51	-5,35	-11,77	-20,17	-29,89
Diani; Bac	-1,02	-3,44	-7,65	-13,27	-20,03
Streams and station		S	ensitivity 2,5°C		
Milo ; Kankan	-3,18	-11,60	-25,70	-41,79	-58,10
Niger; Kouroussa	-2,40	-7,86	-16,83	-28,28	-41,13
Niandan; Baro	-1,21	-4,45	-9,53	-16,30	-24,43
Konkouré; Pt Télémélé	-2,40	-7,86	-16,79	-28,27	-41,12
Diani; Bac	-1,28	-4,85	-10,71	-18,75	-27,93
Streams and station		S	ensitivity 4,5°C		
Milo ; Kankan	-4,32	-15,86	-33,94	-54,46	-72,83
Niger; Kouroussa	-2,78	-10,79	-23,01	-38,26	-54,17
Niandan; Baro	-1,50	-5,66	-12,63	-21,96	-33,53
Konkouré; Pt Télémélé	-2,80	-10,76	-23,00	-38,25	-54,18
Diani; Bac	-1,79	-6,76	-14,92	-25,77	-38,52

Table 4: Projected change (%) rates of some rivers deadlines

> Vulnerable socioeconomic groups

In Guinea Bissau, over 80% of the population lives and works in rural areas. The livelihoods of these populations are increasingly degraded. The negative impacts of human activities mismanaged in the country are exhacerbed by climatic disturbances reinforcing the degradation and loss of vegetative cover of watersheds, the destruction of natural formations and gallery forests, silting up the beds and plains, the loss of animal and plant species, the decline in soil fertility. So, all socio-economic groups, dependent ecosystems and their resources to meet their subsistence needs, are vulnerable. The most vulnerable group consists of farmers who constitute the occupational layer the largest and poorest. In the hinterland, the decline in rainfall, drought, flooding and strong insolation cause, as appropriate, declining soil fertility and the crop yields, the spread of diseases and pests of plants and animals, water scarcity and increased risk of bush fires. In coastal areas, the intrusion of sea water on the continent causes flooding of rice-growing land and salinization.

Apart from farmers, ranchers and market gardeners are also very vulnerable. For breeders, climate disruptions lead to the depletion of forage species, the depletion of grazing areas, the increase of transhumance, the proliferation of episodic diseases and exacerbation of conflicts

between farmers and herders. For gardeners, the decline in soil fertility, water shortage and the resurgence of diseases and enemies of plants are increasingly the cause of a counter performance of gardening.

ADAPTATION NEEDS IN EAST GUINEA-BISSAU

Current coping mechanisms of family farmers in East Guinea-Bissau are inadequate to protect rural livelihoods from increasing climatic stress. Two examples are pastoralism and permanent agriculture: temporary moving of cattle during times of droughts has augmented pressure on water and forest resources elsewhere, and an increasing number of families have reported to suffer violence and robbery while away from their home regions. In agriculture, strong reliance on cashew nuts for family income turns farmers vulnerable because yields have declined and world market prices have become more volatile. In particular, recently falling average cashew prices have increased food insecurity as the exchange rates between rice and cashew changed: instead of receiving 3 kg of rice for 1 kg cashew between 2011 and 2012, farmers only received 1 kg of rice for 1 kg cashew in 2013 (WFP, 2013). Other coping strategies such as reduced food consumption below nutritional needs, sales of household assets in order to buy cereals, or acquiring rice through high interest loans given by cashew merchants (Temudo and Abrantes, 2014) also affect livelihoods negatively.

The Nairobi Work Plan (UNFCCC, 2010) recognizes the implicit relationship between climatic and social stressors when stating that adaptation can either include climate-proofing of existing socioeconomic activities (by integrating future risk) or the expanding of adaptive capacity of activities or systems to deal with increased climatic variability and change. In both cases, potentially critical thresholds in existing climate risk management strategies are modified through adaptation in order to reduce vulnerability to climate change impacts, either via incremental, systemic or transformational changes (UNFCCC, 2010).

In practice, adaptation options for climate-smart agriculture – that is agriculture that sustainably increases productivity, resilience (adaptation), reduces or removes greenhouse gases (GHG) (mitigation), and enhances achievement of national food security and development goals (FAO, 2010) - focuses on practices to build resilience to existing risks and to changes in an evolving climatic and socioeconomic context (Meybeck et al., 2012). In this context, climate-smart agriculture adaptations include a variety of potential actions: implementation of climate forecasts (for crop risk management) or early warning systems, promoting behavioral change (e.g. through promoting efficient water use in times of droughts, or changing of planting dates), improving water access conditions (sustainable use of groundwater resources, increasing water storage capacities, rainwater harvesting, etc.), agricultural development (deficit irrigation, crop rotation practices, short cycle crops, use of drought-resistant seeds, measures to reduce soil erosion, cereal storage facilities or animal traction), livestock management (manure management, improved feeding or grazing management), biodiversity conservation (e.g. agroforestry to improve microclimatic conditions for livestock and to mitigate surface water runoff) or health interventions (FAO, 2010; Niang et al., 2014; Porter et al., 2014; Schaeffer et al., 2013; Thornton et al., 2015; UNFCCC, 2010).

In dryland regions adaptations are often autonomous and reactive to short-term motivations (Niang et al., 2014). However, in the context of Guinea-Bissau's resource-poor family farmers it is clear that few families have the opportunity uptake any set of more ambitious adaptation options mentioned above. Welfare and off-farm income have been identified as important indicators for autonomous adaptation (Thornton et al., 2015); both conditions which are notably absent in the

majority of East Guinea-Bissau farmers. Other constraints for the adoption of adaptation options that increase the resilience or diversity of agricultural systems, or enhance food security and climate risk management are also frequent. For example, weather information for crop and livestock management may be unreliable or inaccessible, while improved feeding may prove as too costly for farmers (Thornton et al., 2015).

Supporting family farmer families in East Guinea-Bissau through strengthening of climate-smart agricultural practices may thus provide important benefits, both in terms of sustainable livelihoods and resilience to climate change. At the same time, delaying broader adaptation approaches is likely to increase overall costs in the future and lead to higher levels of vulnerability of the affected communities (Schaeffer et al., 2013; UNFCCC, 2010). Many LDCs, including Guinea-Bissau, have now developed their National Adaptation Programmes of Action to Climate Change (NAPAs) which identify priority adaptation projects. Next to climatic risk, these priority measures also address immediate social and environmental needs of communities. In this context, the UNFCCC has adamant in urging LDCs to carry out these projects soon as possible (UNFCCC, 2010).

In the past decade, Guinea-Bissau has reduced important information and data knowledge gaps required for impact, vulnerability and adaptation assessment. Positive contributions have come from the GEF/UNDP project "<u>Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau</u>" (00077229) (LDCF) which has started climate-smart agriculture pilot initiatives in 14 tabancas of the Gabú 'region'. In this context, the present project proposes to scale-up identified climate-smart agriculture practices in East Guinea-Bissau, using the GEF/UNDP project as a starting point for mainstreaming adaptation into development planning and institutional capacity building.

SUMMARY OF THE RESULTS OF LESSONS LEARNED STUDY FROM THE LDCF PROJECT

So to avoid past mistakes and improve the performance of the new project, a study on the lessons learned from the project "Strengthening Climate Change Adaptation and Resilience in the Agrarian and Water Resources Sectors in Guinea-Bissau" (00077229) was conducted during the preparation of the full project. The objective of this study is to identify and analyze the relevant lessons learned from the GEF/UNDP LDCF project implementation, in order to support the Full Proposal development of the "Scaling up climate-smart agriculture in East Guinea Bissau" (GNB/RIE/Agri/2015/1). Specifically, the study aims to respond to these two questions raised by PCN reviewers of the Adaptation Fund Secretariat:

- Question 1: What have been the main achievements of the LDCF funded project at the end of the project, and has its implementation has resulted in opportunities to achieve higher cost-efficiency in the investments in the proposed project; and
- Question 2: How will the project make use of the lessons learned and best practices from the LDCF project?

Within the context of these questions, the lessons learned include the "identification and analysis of constraints, opportunities, and approaches to be considered for the new Adaptation Fund Full Project, focusing on all relevant aspects (technical, environmental and social, organizational, institutional, legal, financial, etc.) that enabled the implementation of project activities and the achievement of the expected results under the LDCF project".

Furthermore included are descriptions of best practices for adaptation to climate change in the Gabú LDCF project region, focusing on projects that have proven their adaptability to adverse effects of climate change and climate variability, soil management and appropriate management of pesticides.

This study on lessons learned is undertaken in support of the Full Proposal development of the project "Scaling up climate-smart agriculture in East Guinea Bissau" (GNB/RIE/Agri/2015/1). This report aims to answer the two questions below. It does neither constitute a final evaluation of the LDCF project nor a M&E report of climate-smart agriculture projects, and therefore does not give a complete validation of the project's development strategy or its intervention logic. Instead, this study can be seen as a rapid assessment of the LDCF project, based on a review of the project documents made available, a limited number of semi-structured interviews with the project team, and participant observation in short field visits.

Particular focus of this study is on responding to these two questions: (1) what worked in the project; and (2) what could be improved in the project. These questions are responded to both in terms of project design and formulation and at the project implementation level.

The summary of the report's findings are presented below (the detail report is presented in annex 3).

Quality and pertinence of the project process formulation:

The LDCF project was found to have a clearly defined institutional mechanisms and a logical theory of change. There are real doubts whether the LDCF field interventions are sufficient to turn agro-pastoralist production systems resilient against climatic stress, as well as whether the

activities are sufficient to improve the participants' livelihoods. In particular, biodiversity services and pastoralists needs should be considered to a higher degree in order to contribute to vulnerability re-duction in both Bafatá and Gabú regions.

Project indicators for the Adaptation Fund project proposal need to be designed more carefully in order allow for consistent M&E of the project.

Project relevance to the political context of Guinea-Bissau:

The LDCF project supported the relevant government policies and plans, including the country's Poverty Reduction Strategy (2011-2015) and NAPA priorities. But identification of project initiatives outside the government sphere had been insufficient, as remarked in the ongoing Adaptation Fund project review process. Therefore it is suggested that a thorough review of relevant projects in the project area should be undertaken for the Adaptation Fund full project proposal development in order to identify overlaps and possibilities for collaboration, including actors from international institutions and NGOs/CSOs. Part of this review has been done during Project Concept Note development, but should be updated at project start.

Risk management:

Identified risks and risk hypotheses were relevant and clearly identified, and risk management was appropriate under the circumstances. The Adaptation Fund project should update risk hypotheses from the LDCF project.

A continuous risk assessment system should be implemented in order to systematically identify and assess risks during project implementation, according to type (environmental, financial, operational, political, regulatory or policy), level (standard or critical), response category (emergency plan, monitoring or other), changes in risk (mitigated, stable, increasing, problem) and date of risk identification. Risks should be identified at local (field intervention), national (project lead unit) and communication between boths levels.

Given that the scale and complexity of the Adaptation Fund project will increase compared to the LDCF project (geographically and in terms of financial resources) it is recommended that the project hires a specific technical expert (or teaa of experts) with proven expertise in risk management which would also improve building capacities in adaptive management in the project.

Project management structures and contribution to effective and efficient project development:

Overall, work management structures and PTAs (Annual Work Plan) were judged to be of good quality. However, the Project Steering Committee (PSC) did not have the role laid out in the PRODOC regarding LDCF project implementation and strategic guidance. These mechanisms should be redesigned for the Adaptation Fund project given the delays caused by this.

Training of the project team in technical, participatory processes, and project management should receive more attention from the start of the project to allow better serve beneficiaries. Project Management Unit personnel for the Adaptation Fund project should be recruited by call of application, should have experiences on the field in the project actions. Their technical capacities should be enhanced on adaptation, fiduciary, environment, social and gender standards.

Functionality of project partnerships established:

The LDCF project established relevant partnerships with national partners (through six

partnership protocols) and regional and local government, but the agreements did not always result in concrete action by partners. Agreements should be maintained and strengthened where necessary. Partnerships with CBOs should be broadened in the new project in order to ensure sustainability and a more effective replication and diffusion of activities and results. In this work with CBOs and NGOs will require strict supervision from the project team, both in technical and financial terms.

A positive example has been social mobilization through the Rural Climate Change Forum.

Adequacy of monitoring and evaluation mechanisms:

Monitoring and evaluation indicators were identified in the PRODOC. However, neither a socioeconomic and agroclimatic baseline (project start) nor a follow-up monitoring of interventions was undertaken. Because of this the contribution of the project to local (community) vulnerability reduction is impossible to verify. This is a clear 'information deficit'. As a consequence local interventions seem to have been decided upon largely through ad-hoc decisions by the technical team, but not scientific evidence. This 'information deficit' has two direct impacts: it (1) affects the capacity to obtain further financing in the future as positive impacts on livelihoods and vulnerability reduction by the interventions cannot be proven; and (2) field interventions are implemented without an empirically validated scientific evidence basis. It is therefore strongly recommended to develop a representative reference/baseline dataset and M&E system which covers relevant socioeconomic, environmental and agroclimatic data for both Bafatá and Gabú regions. M&E should include both possible participants and non-interventions groups in order to allow comparisions in productivity, resilience (adaptation), reduction or removal of greenhouse gases (GHG) (mitigation), and enhancing achievement of national food security and development goals. The data collected should be supported by existing/updated agroclimatic zoning information for both regions. This activity needs to be carried out at the start of the contract before field activities are carried out. The hiring of a dedicated international team of experts to develop this work is also strongly recommended, if possible in collaboration with national partners from university in order to build research capacity in Guinea-Bissau. This cooperation should also include BOAD and UNDP Guinea-Bissau as a key supporting actors.

Gender and equity dimensions have been incorporated into project activities relatively strong, but efforts should be made to better communicate links between discussions with women, their opinions, the activities developed together with them and possible outcomes, and the evaluation by women. Gender aspects should specifically also be incorporated into the M&E system. Gender sensitivity of community forest protection should be studied more closely, given that male household members are largely responsible for slash-and-burn agriculture.

Effectiveness of project implementation:

Actions for agriculture have been implemented not in integrated development approach, but in a dissated and unconnected manner at the village level. This should be altered towards a more integrated approach in a new project (see below). Actions for livestock and pastoralists have been extremely limited in face of the challenges faced by the sector. Water infrastructure needs to be better integrated into the subproject development at village level. Assigning a field coordinator (not existent in ongoing LDCF project) may also be necessary to fully coordinate field interventions.

Cost-effectiveness relationship of project in terms of time and budget:

Overall cost-effectiveness has been judged positively in mid-term evaluation, despite low overall

density of subprojects in the field. Given the higher number of participating tabancas in Gabú and a high number of tabancas in Bafatá from the beginning on it is believed that the costeffectiveness of the new Adaptation Fund project would be higher.

Project contribution to building of adaptive capacities of the beneficiaries:

The targeted population has been reached by the project, but it is recommended to allocate more resources to field interventions. Beneficiary selection should be based on stringent criteria to avoid mis-selection of ineligible candidates for subprojects.

On the relevance of integrating climate-smart pastoralism activitites: Pastoral systems occupy large areas in Gabú in Bafatá regions under alarming land degradation and desertification rates. They are culturally, socially and economically appropriate for maintaining the well-being of dryland communities while providing for important ecosystem services and wildlife diversity. However, rangelands are becoming less available as local population and agricultural areas expand, with transboundary cattle herd migration becoming increasingly difficult due to stricter border controls. And pastoralism is also vulnerable to climatic change as drought periods and frequency increase in East Guinea-Bissau's regions. In this context, turning pastoralism resilient to climate change is integral to climate-smart agriculture (FAO, 2009). For adaptation and vulnerability reduction, the improvement of grazing practices has immense potential to improve productivity in livestock and agriculture while bettering rural livelihoods and food security, with additional benefits for agriculture via reduced soil compactation or rainfall loss (higher water source replenishment and water holding capacity through reduced surface water run-off and evapotranspiration, which increases water availability also during drought periods). Current planned activies are insufficient to provide these benefits: the LDCF project addressed livestock only through forage production and cattle vaccination. Therefore, the new Adaptation Fund project should include communitybased rehabilitation of rangelands (including restoring of organic matter to soils), improved grazing management (including rotational granzing to decrease losses resulting from overgrazing), conversion from cultivation and native vegetation, sowing of legumes and grasses, and building of pastoralist innovation field school example such as in Uganda (FAO, 2011) as integral part of a vulnerability reduction strategy, with added benfits for rural incomes, food security and biodiversity. Pastoralists can be managers of these improved rangelands. This requires a proper work package of activities, including sociological work and technical assistance to herders in order to increase acceptance and knowledge in grazing management. Project coordination efforts would be needed to manage both agricultural and livestock work packages. Several project activities such as contingency plans where not always found to be effective. These should be redesigned for a new project. Activities to reduce slash-and-burn agriculture and forest fires should be also integrated into the project given their long-term negative impacts on agriculture and livestock.

Sustainability of activities and the impacts achieved by the project, and replication potential:

Overall potential for sustainability is considerable. LDCF activities contribute to the socioeconomic development of a region strongly hit by climatic extremes and change, while protecting the region's environmental resources and contribute to recuperation of degraded lands. Project ownership is often high. Communities are involved in all activities, either directly or represented through the RCCF or Environmental Vigilance Committees (CRA). Furthermore local communities were involved in the project design and seeking of solutions from the beginning of the LDCF project.

The project team should continue to seek establish cooperations in order to upscale investments into climate-smart agriculture and pastoralism throughout the project duration.

The new Adaptation Fund project is drafted to correct the weakness and up scale the good experiences of the LDCF project. These corrections and up scalings process refers to new activities in both original tabancas of the ongoing LDCF project and an additional tabancas in the 'regions' of Gabú and Bafatá, with total beneficiary target population for the new project foreseen at approximately 54 000 people⁸ in East Guinea-Bissau.

⁸ The project will develop 1100 hectares hectares of which 100 ha for market gardening. Each household will occupy a plot of 0.25 ha. On average there are 7 people per household.

PROJECT AREA AND BENEFICIARY POPULATION

Project area

The project seeks to scale the LDCF project activities. In this sense, and in order to expand the impact of the actions of the project for sustainable food security of the country, the Bafata region, bordering in the Gabu region in which the LDCF project activities will be put across, was retained. The project area covers the regions of Bafata and Gabu. Gabú region is located to the East of the country and capital is Gabú. It is limited to the North by Senegal.

Gabú region is located to the East of the country and capital is Gabú. She is limited to the North by Senegal, to the West by the Bafata Region, to the South and East by Guinea Conakry. Bafatá region capital is Bafatá and is limited to the North by Senegal, West by the region of Oio, Quinara, Tombali region South and to the East by the region of Gabu. These two regions form the Bissau-Guinean is.

The project will be implemented in the northern parts of these regions in the sectors of Sonaco, Pirada, Pitche, Gabù, Cuntoboel and Ganadu. The southern parts abound of protected areas and corridors of passages of the animals. The following figure shows the demarcation of the area of intervention of the project.

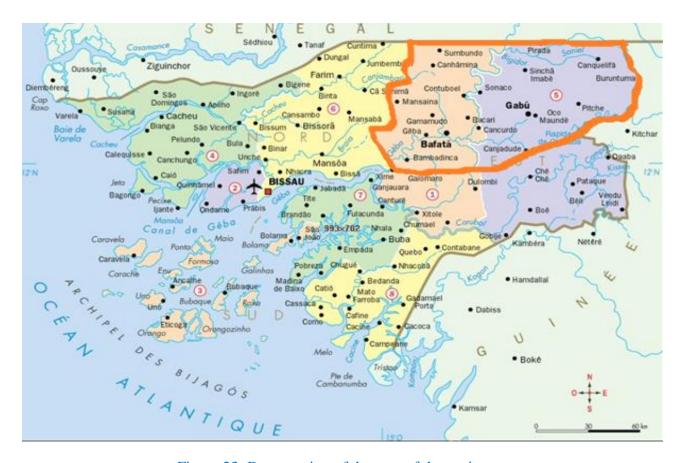


Figure 23: Demarcation of the area of the project

In terms of population, the Gabù and Bafatà regions account for 44.2% of the total population of Guinea Bissau (Gabù, 29.9% and Bafata 19.3%) according to the 2009 general census, ie a total of 406 492 inhabitants. With an annual growth rate of 2.5%, this population would have reached 483191 inhabitants.

In terms of climate, the Bafata and Gabú regions are subject to a Sudanian climate characterized by alternating a short rainy season (June to October) and a long dry season (November to May). The evolution of annual precipitation analyses show that over the past years, there will be a significant decline in rainfall (annual height and number of rainy days). This variability from one year to another and over the months, particularly at the time of the appearance of the first pluieset at the end of the rainy season and the maldistribution of these rains during the cropping cycles, makes random agricultural production. Monthly averages of temperature are substantially constant from one year to the other, and are between 24 ° C and 30 ° C. But, the maximum and minimum reach gaps in Bafatá, averages range from 300 to 390 C for the maxima, with absolute values of the order of 42 - 43 ° C (March - April) and between 15 and 23 ° C for the minima, and absolute values may fall up to 10 - 12 ° C (in December or January). The monthly average humidity is between 46 and 80%. An annual average of 62%.

In terms of soil, one meets tropical ferruginous soil that are generally associated with the breastplate or horizons gravillonnais, located in depth. The terraces are common and can flush, such as break in slope. Also: (i) of the lithosols associated with battleships and rocky outcrops (especially on both sides of the Cocoli); (ii) soil little advanced erosion, associated with battleships and dismantled gravillonaires horizons; (iii) soils little advanced filler, associated with alluvium or colluvium of sorts; and (iv) to George, pseudogley, valleys and depressions hydromorphic soils.

This area is marked by the destruction of vegetation cover by inversions, fires, shifting cultivation and exposure of the surface to the Sun and the rain. Reducing balance and threatens the current fertility of the soil. However, the productivity of the soil depends on the type of culture. Artisanal and industrial wood production is dominated by the domestic timber merchants and a large majority of the timber merchants is of illegal origin, some from neighbouring republics, with some national complicity. Most of the 'native' population directs their forest operations for the production of oil and Palm wine, construction materials, medicinal plants and collection of fruits with hard obsolete techniques, without any problems of rationality and conservation.

Agriculture represents an important value in the local economy. It is the basis of its development. It is mainly practised by most of the working population of these regions (about 80%), a practice necessary for the survival of families. Cultures are practiced in all three major ecological systems: trays, shallows and mangroves (South - Bafatá). Developed speculations are: (i) cereals including rice, which is the main staple food of the population (the rice is consumed by more than 90% of the population), corn, millet and sorghum. (ii) the tubers, (iii) vegetables; and fruits.

Farming is also practiced by most of the population of the regions nationwide family and differentiated according to the type of animals. Chickens are the production of the family, because it is easy to operate. The production of small and large ruminants, is dominated by the Fulani (majority inhabitants of those areas), in extensive form. Gabú region is considered to be the area that has the largest number of cattle, goats and chickens field, followed by the region of Bafata. The two regions hold approximately 66% of the cattle herd of the country.

These regions are confronted with phenomena related to climate changes that affect agricultural production and exacerbate food insecurity. On average 32% of rural households have cited drought / irregularity rains and flooding as the main shock has affected agricultural production and

livestock. Food insecurity finds its place and poverty remains the daily. Food insecurity affects 14% of the population in Bafata and 15% to Gabu. Currently more than 70% of the population affected by poverty as, she compared to 64% in 2002. Malnutrition affects 6.8% of the population in these regions and remains higher than the average national which is 5.6%. Households in which the head is a woman or not educated are more vulnerable. To deal with this situation of food insecurity, households are appeal to a number of survival strategies for food among other things: the reduction of the quantities consumed by adults; less preferred food consumption is also very intense. The reduction of the amount of food eaten during the meal; the reduction in the number of meals per day. These strategies not only to plunge people into a vicious circle where poverty, food insecurity and malnutrition are mutually.

Areas and villages of intervention

Field work helped identify likely potential sites to host the project. The following overall criteria allowed to retain a non-exhaustive list of potential sites/villages:

- 1. Site not located on a reserve of fauna, in a protected and not adjacent to the major corridors of passages of animals area (confers figure 19);
- 2. Site which development will not cause a displacement of the population
- 3. Site, including the surrounding villages are identified vulnerable in terms of biophysical, climate and social risks;
- 4. Site is surrounded by villages of which there are at least 150 to 200 households if the area is between 25 and 50 ha and the less than 200 households if the area goes beyond 50 ha;
- 5. Not yet receiving similar support site and having not programmed for similar activities;
- 6. Sites with potential beneficiary villages close to each other in order to make flexible coordination of the actions on the ground and limit the costs associated with the management of the project;
- 7. Site with potential significant for the development of irrigation and easily convertible;
- 8. Area known for its strong potential in livestock including cattle with at least 2,000 heads;
- 9. Area known for its water deficit for feeding of livestock as well as for the consumption of the population;
- 10. Area which groups and/or the villagers are recognized as active people with a good organization

Based on these criteria, the potential sites presented in the following table were selected in order to predict at this stage different types of infrastructure can be installed as part of the project:

Region	Sectors	Sites	Geographic	Number of	Available area
			coordinates	villages	(ha)
	Pitche	Bucuré Boboti	N 12º 20' 09,5" W 13°42' 58"	5	100
		Copiro	N 12º 20' 33,7" W 13° 54' 42"	10	60
		Sago/Fulamori	N 12º 18' 33,8" W 13°55' 59,7"	6	80
Gabù	Pirada	Soncocunda	N 12º 37' 10,7" W 14°11' 18,1"	6	150
		Sissaucunda	N 12º 38' 17,5" W 14°12' 30,6"	4	65
		Durbali	N 12º 20' 30'' W 13°43' 30,8"	3	60
		Sambataco	N 12º 28' 22,3" W 14°10' 34,1"	7	50
	Gabú	Cumpaghor	N 12º 10' 30,3" W 14°11' 19,8"	7	100
		Bada	N 12º 18' 37,1" W 14°11' 19,6"	9	150
	Sonaco	Colicunda	N 12º 23' 49,6" W 14°21' 02,2"	5	70
Bafatà	Contuboel	Madina Sara	N 12º 26' 14,3'' W 14°36' 42,2"	8	50
		Manatu	N 12º 28' 41,9" W 14°34' 01,3"	11	120
		Galugada	N 12º 28' 09,4" W 14°37' 25,5"	5	50
		Sanecunda	N 12º 33' 57,3" W 14°43' 30,8"	7	60
		Suna Nhamabé	N 12º 27' 23,4" W 14°46' 59,3"	8	75
	Ganadu	Cuncana	N 12º 21' 11,4" W 14°43' 33"	3	50
		Pacua	N 12º 24' 07'' W 14°42' 44,3"	5	80
		Cantacunda	N 12º 25' 48,4" W 14°47' 44,4"	7	150
Total	6	18		116	1520

Table 5: Potential Sites and beneficiary villages Identified

To these sites are added sites partially developed under the LDCF project and which the present project plans to scale up. The latter totaled 661,761 ha (see table below).

Region	Sectors	Sites	Number of villages concerned	Area (ha)
Gabù		Bidigor	4	33,875
		Padjama	4	32,128
	Pitche	Maghai	5	23,55
	T Rone	Nhauar	7	172,55
		Loco Djeré	1	37,44
		Djiulem/Caufan	9	95,776
		Sintchã Bothe	4	52,187
		Cantari	7	40,15
	Pirada	Nuncadja Popodje	5	50,7
		Cantacunda	7	44,275
		Copa Mangui	9	79,13
Total	2	12	62	661,761

Table 6: Sites partially developed under LDCF project

It is to be noted that in the sectors of Pitche and Pirada, new sites have been identified to be developed under the Adadaptation Fund project. The intervention in these two sectors as part of the new project, is justified by the fact that these sectors remain very vulnerable to climate change. According to the report of the joint mission of CILSS, FAO, WFP and the Government Bissau Guinean on evaluating neediness of the harvest 2016/2017 (November 2016), Pitche and Pirada sectors in the Gabù region are characterized by endemic lack of water and are considered structurally at risk of food insecurity and deserve special attention.

At the beginning of the project, a call for submission of subproject will be launched in the predefined area in order to keep a comprehensive list of recipient sites/villages.

***** Different crops developed in the project intervention area

In the project area, main crops (the most important) and secondary cultures are distinguished. Food crops (rice) and cashew occupy first place followed by vegetables (tomato, pepper, cabbage, pepper, carrot...). In General, all of these cultures are made in association with others except for the cultivation of rice. Vegetables are also practiced but low percentage compared to cereals including rice according to the seasons and the agro climatic and soil conditions.

The speculations can be divided into groups as follows:

- vegetables whose main crops in the project area are: onion, tomato, cabbage, lettuce, squash, okra, melon and carrot. These speculations are mainly produced in the lowlands;
- roots and tubers whose main crops: cassava, sweet potato and potato. They are grown as well in the shallows on the trays;
- legumes consists speculation as groundnuts, cowpea and green beans;
- cereals whose main crops are lowland rice and upland rice, millet, sorghum, maize;
- spices and stimulants including chilli and pepper are the main crops;
- fruit with mango, lemon, banana.

Choice of crops to be promoted

Under the project, the rice will be largment promoted in view of its place in the diet of households (90% of households consume rice). Given its low production for lack of resources to mobilize water irrigation and lack of technical support, households depend strongly on the market to stock up on rice. About 76% of the households depend on markets for access to rice during the peak of the lean season (August), 40% in November, 28% in December and 27% in January. The share of rice in food spending expenditures represents 52.3% for people in severe food insecurity and 29% for populations in moderate food insecurity. At the national level, the country remains heavily dependent on rice imports which were increased from approximately 40,000 tonnes in 2000 to 143.000 tonnes in 2010 (or 50% of the 2010 rice needs). Although the updated information is not available, the share of rice in the cereal deficit remains very high (see figure below). The intensification of this culture will reduce: (i) at the level of households, the dependence of the market; and (ii) at the level of the State, the decline in imports. It will help to make it available to the staple of households and reduce food insecurity and poverty.

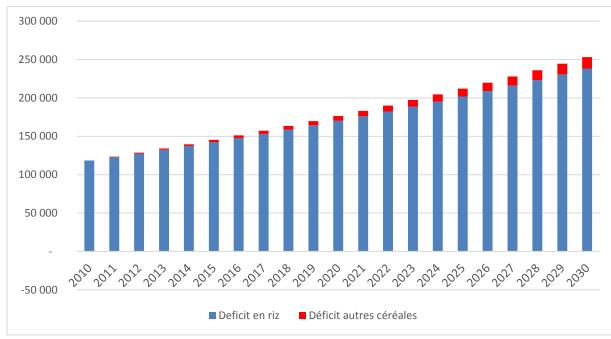


Figure 24: Share of rice in Guinea Bissau ceralier deficit

Under the project, 75% of the 1,762 hectares to be developed under the project will be used for rice production (ie 1,320 ha). This choice is made taking into account the place of rice in household food. 90% of the population of Guinea Bissau consumed rice as the main food. The rest of the area (25%) will be destined for gardens namely potato.

As for livestock, 1,000 new hectares of pasture will be enriched with brachiaria and other plants feed, fertilizer and nutrient.

Beneficiaries population

The populations of the villages around the selected sites will be the direct beneficiaries of the project. In Guinea Bissau, the women are the most farmers who cultivate rice and work in the gardens field. So, they will be the largest beneficiaries of the project. Beyond the technical and institutional capacity building, the project has:

- The rice production on 1362 hectares. Three (03) groups of 6 people or three households of 6 people will be installed on 1 ha of rice. Eighteen (18) people will thus be beneficiaries of the development of one hectare of rice, ie 24,516 beneficiaries of the 1362 hectares developed under the project
- Vegetable production with potatoes, tomatoes and onions in 400 ha. Seven (07) groups of 6 people or 7 households of 6 people will be installed on 1 ha of landscaped gardens. Forty-two (42) people will thus benefit from the development of one hectare of market gardening, ie 16 800 beneficiaries of the 400 hectares developed under the project.
- The production of forage on 1000 ha pilots. One (01) hectare of pasture pilot will be allocated by group of people or household of breeders of 6 people or 6 000 in all beneficiaries of this activity.
- The drinking water supply for livestock and population from 30 boreholes. Beyond the beneficiaries of the agricultural and livestock activities which are directly fed by the drilling of drinking water, 40 other households of 6 people not involved in the project, so 240 people by drilling water and 7 200 for the 30 boreholes will benefit from This infrastructures.

The following table summarizes the number of beneficiaries of the field activities of the project besides the beneficiaries of actions against bushfires which affect all villages.

 Table 7: Number of beneficiaries of the project

Total number of beneficiaries of rice production	24516
Total number of beneficiaries of the vegetable production	16800
Total number of beneficiaries of pasture development	6000
Number of people not involved in the project benefiting from drinking water infrastructure	7200
Total beneficiaries	54516

OBJECTIVES OF THE PROJECT / PROGRAM :

List the main project objectives.

List the main objectives of the project/programme.

In the context of extreme vulnerability of family farmers to climate change in dry land East Guinea-Bissau, the overall objective of this project is *to strengthen practices and capacities in climatesmart agriculture in the project region and at institutional level.* Through the project's activities, food security and livelihoods are to be strengthened at household level while simultaneously increasing capacities in climate risk management and adaptation planning at all levels of governance. In particular, the project will solidify and expand the activities of GEF/UNDP-00077229 project "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" both in the 14 original tabancas in Gabú 'region' of that project while integrating an additional ~100 tabancas in the 'regions' of both Gabú and Bafatá into the project's scope of action, with a total beneficiary target population of approximately 37,000 people in East Guinea-Bissau.⁹

This ongoing LDCF project (00077229) aims to increase resilience to climate change through both immediate and long-term adaptation measures in development policies, plans, programs, projects and actions. Through outputs organized in three work packages/outcome indicators, the project is to contribute to livelihood security, including agriculture and forest resources, and maintenance of water resources in the face of a changing climate. The three outcome indicators include (1) Climate change risks and adaptation measures integrated into key national policies, plans and programs for water, agriculture and livestock management; (2) Small and medium scale climate change adaptation practices for water, agriculture and livestock management are demonstrated and implemented in the selected region; and (3) Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes are disseminated.

The current project proposal will follow the existing intervention framework closely, putting emphasis on scaling-up successful initiatives and capacity building at all levels of governance.

Key achievements of the GEF/UNDP project "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" (00077229) include (i) a first identification assessment of key agencies involved in the management of climate risks; (ii) climate adaptation interventions at community-scale with capacity building, including 622 people trained on climate-resilient agricultural practices (crop rotation, terracing, intercropping, conservation of water and soils, etc.), introduction of three rice short-cycle varieties, introduction of forage crop for animal consumption, installation of 9 demonstration fields, 4 veterinary pharmacies, introduction of improved poultry, goat and sheep breeds (more resilient to heat stress), creation of a cereal bank, implementation of eleven seed banks, construction of eight waterholes and three wells, among other; (iii) implementation of a council on environmental monitoring and development of contingency plans in 10 villages, which were already put to test on the occasion of the recent floods in August-September 2015; (iv) establishment of the Rural Climate Change Forum (RCCF) for the project intervention area, which is composed of 23

members (4 of which female) from 14 villages, including ranchers and farmers; (v) 5 policy documents were been revised with the integration of the dimension of climate change (the Charter of agricultural development policy, the Charter of the policy on livestock, the blueprint for water and sanitation, the document of the strategy of poverty reduction, the Development Plan of the Gabú Region including the development of Pitche and Pirada plan). In this the current project proposal can thus build on a solid intervention and institutional framework – both regionally and locally – for project implementation and capacity building, as well as build on existing lessons for precise adaptation interventions. This project proposal will solidify and expand upon on the key achievements obtained so for from the existing project.

The project will address key vulnerabilities in agriculture and water resources management, and thus contribute to immediate and longer-term development and resilience needs of extremely vulnerable farmers, with a particular focus on extremely vulnerable groups: women, elderly and children. As such, the project is in line with the recommendations of the UNFCCC Nairobi Work Programme (UNFCCC, 2010) and the best available scientific evidence on climate change impacts, vulnerability and adaptation in agriculture, water resources as well as food security (Niang et al., 2014; Porter et al., 2014).

In accordance with the initial scoping of vulnerability and adaptation needs the three specific objectives of the project are thus:

- 1. Develop technical and institutional capacity of government and civil society (private sector, local communities, NGOs) to address increasing climatic risk in climate change adaptation planning;
- 2. Enhance the resilience of existing agricultural productive systems and contribute to the diversification of production, including via implementation of climate-resilient water control and management actions to minimize risks from intense droughts and floods;
- 3. Promote knowledge dissemination of lessons learned on climate-smart agriculture and adaptation planning to other regions of the country, other countries in West Africa and to international climate change negotiations and fora, including the UNFCCC process.

COMPONENTS AND FINANCING OF THE PROJECT/PROGRAM:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

For the case of a programme, individual components are likely to refer to specific sub-sets of stakeholders, regions and/or sectors that can be addressed through a set of well defined interventions / projects.

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1. Development of technical and institutional capacity to address the increase of climate risk with the adaptation practices and planning	 1.1.1 Socio-climatic vulnerability assessment for East Guinea- Bissau 1.1.2 Assessment of technical capacity building needs of ministries and field operatives for adaptation planning 1.1.3 Formulation of detailed intervention plan for pilot climate- smart agriculture actions and policies, procedures and guidelines related to climate change, gender and natural resources 	1.1 Technical capacity of government and field workers to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions enhanced	0.7M
	 1.2.1 Technical trainings on adaptative systems and organizational capacity building for identified target groups 1.2.2 Technical assistance and rural extension for subprojects 	1.2 Farmers groups, private professionals of development, associations and government experts have integrated knowledge on climate-smart agriculture,	
	 1.2.3 Formulation/Update of contingency plans for climate-risk management 1.2.4 Support for famers groups by the government technical experts for adaptation actions implementation 1.2.5 Capacity building to prevent forest fires 	environmental, social and gender in practice (on- site) and adaptation planning	
2. Enhance the resilience of existing agricultural productive systems, including water control and management measures	 2.1.1 Development of lowlands to maintain agricultural production in drought periods 2.1.2 Construction of microdams for irrigation of rice, vegetable crops and livestock 	2.1 Agricultural and livestock activities are climate-smart and contribute to sustainable increases in productivity and enhance national food security	7.55M
	water supply 2.1.3 Rehabilitation/improvement of soil and pasture productivity and small-scale investments into		

3. Knowledge management of lessons learned on climate-smart agriculture and adaptation planning	agriculture inputs, machinery and tools 2.1.4 Construction of drills/wells and ramps for improved livestock and domestic water supply and market gardens development 3.1.1 Knowledge management strategy developed 3.1.2 Project website developed and active 3.1.3 Manual and other materials on best practices and measures for climate-smart agriculture are developed 3.1.4 Dissemination of results to other regions of Guinea-Bissau and West Africa	3.1 Sustainable climate- smart agriculture practices and management is disseminated in comparable regions of the country and other West African countries	0.150M	
5. Project/Programme Execution cost				
6. Total Project/Programme Cost				
7. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)				
Amount of Financing Requested				

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Milestones	Expected Dates
Start of Project/Programme Implementation	May 2017
Mid-term Review (if planned)	June 2020
Project/Programme Closing	June 2022
Terminal Evaluation	December 2022

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

Component 1: Development of technical and institutional capacity to address the increase of climate risk with the adaptation practices and planning

Guinea Bissau has challenges in terms of the amount and quality of data and information as well as technical capacity to implement climate change adaptation. Despite progress through NAPA development, and an increasing number of scientific studies (see review in introductory section), important gaps remain with regards to climate impacts, socio-climatic vulnerability, and effectiveness of climate adaptation actions and planning. In this context, the project proposes a component for building technical and institutional capacity for climate change adaptation planning; both long-term perspectives on adaptive capacity building/policy development and near-term climatic risk management. Particularly this will include participative development of on-site agricultural and water-management adaptation actions and the development of contingency plans (e.g. flood protection) for climate-risk management. A further focus will lie on the strengthening of interactions between relevant actors for climate change adaptation: government, meteorological services, agriculture sector, research institutions, regional and national government, and the media and local and indigenous communities.

The expected outcomes of Component 1 include (i) technical capacity of government and field workers to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions is increased; and (ii) farmers groups, private professionals of development, associations and government experts have integrated knowledge on climate-smart agriculture, in practice (on-site) and adaptation planning. Both outcomes build upon the experiences from GEF/UNDP-00077229 project; therefore the planned capacity building modules will require mainly adequation of existing practices from that project, but not the design and implementation of entirely new modules.

Outcome 1.1.: Technical capacity of government and field workers to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions is increased

In terms of component outcomes technical capacity of government and field workers to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions is to be increased, while the target groups will be able to plan and implement climate-smart agricultural practices in the project region.

Output 1.1.1. Socio-climatic vulnerability assessment for East Guinea-Bissau

One of the outputs of the component 1 include an assessment of socio-climatic vulnerability in order to identify agricultural systems and communities most at risk. This will integrate field interviews, focus group meetings, data collection and intervention assessment compared to non-intervention cases (Chambwera et al., 2014) with medium- to long-term climate change downscaled GCM projections. The identified locations through this vulnerability assessment will form the main target for project interventions, including future possible projects.

The results of this study will help developer guide socio-climatic vulnerability assessment at the local level. The purpose of this guide is to allow a self-assessment of the vulnerability of areas/provinces, villages and households in the face of the climate. This self-assessment should take actions to adapt to the local level. This guide should be simple to use by actors at the level of local and easy to interpret. It will be translated into national and local languages. This guide, once approved, will be broadcast in other parts of the country.

Output 1.1.2. Assessment of technical capacity building needs of ministries and field operatives for adaptation planning

To further raise the technical capacity of the main governmental organizations involved, a training needs assessment will be carried out to identify required capacity developments for effective and efficient implementation of the project and adaptation planning capacity, with a focus on climate resilience in the agricultural and water sectors. This assessment will identify the specific needs of specific groups at both ministerial (Bissau) and field-level (regional governments, extension workers), and will be implemented through a range of technical training events. Possible topics are based on key identified vulnerabilities, may include: water management, control and conservation; best practices in climate-smart agriculture; basic GIS training for use in planning project interventions. The needs assessment will also consider possible linkages between traditional knowledge and scientific knowledge.

Output 1.1.3. Formulation of detailed intervention plan for pilot climate-smart agriculture actions and policies, procedures and guidelines related to climate change, gender and natural resources

This activity concerns: (i) formulation of detailed intervenetion plan, (ii) formulation/update of policies, procedures and guidelines related to climate, and (iii) Development of monitoring and evaluation system document.

a. Formulation of detailed intervenetion plan

Once capacity has been enhanced, a detailed intervention plan will be developed across all those sectors involved. This will outline the key vulnerable locations, the proposed interventions on a site-by-site basis, the institutional framework and the lines of reporting and responsible contacts.

b. Formulation/update of policies, procedures and guidelines related to climate change

In order to prevent a possible lack of national policies and legislation on environmental and climate change adaptation needs, gender and natural resources sustainable management, the project will help to improve or develop, validate and approve national policies, procedures and guidelines to address these issues.

With regard to policies and plans, the project will proceed to the revision of the political forest management in the Bafata Regional Development Plan and development plans of the areas of intervention of the project, including the sectors of Sonaco, Contuboel and Ganadu. It will be introduced in these documents the problem of climate change and adaptation strategies with short, medium and long term actions.

With regard to the standards and guidelines, the actions to be taken include:

- Developpement/enhancing of guidelines on dams' security, people involuntary resettlement, land use, forest management, pest management, indigenous people, natural habitat, physical cultural resources, public participation in environmental impact assessment process and gender mainstreaming. The project will also help to develop

certain principles of the Adaptation Fund namely: Equity and access, Gender Equity and Women's Empowerment, Marginalized and Vulnerable Groups;

- Preparation of national and local guidelines on the integration of the climate in sectoral policies as well as in projects/programs;
- Organization of workshops for the adoption of standards and guidelines;
- Dissemination of the standards and guidelines;
- Follow-up of the internalization and application of these standards and guidelines at the local and national level.
- c. Development of monitoring and evaluation system document

A monitoring system will be developed through independent consultation. The consultant will be recruited to support the project team to the implementation of an effective system of monitoring and evaluation of the project. This system will include the ongoing assessment of adaptative actions on the sites and the reporting.

To allow the Project Management Unit to do a good project risk continuous monitoring and evaluation (political, strategical, financial, environmental and social, cultural risks, etc.), the capacity of the team will be enhanced on adaptation, fiduciary, environment, social and gender, etc. standards.

Outcome 1.2 Farmers groups, private professionals of development, associations and government experts have integrated knowledge on climate-smart agriculture, environmental, social and gender in practice (on-site) and adaptation planning

The following activities are planned to meet this outcome: (i) technical trainings and organizational capacity building for identified target groups; (ii) technical assistance and rural extension for subprojects; (iii) update of contingency plans for climate-risk management; (iv) support for famers groups by the government technical experts for adaptation actions implementation; (v) capacity building to prevent forest fires.

Output 1.2.1 Technical trainings on adaptative systems organizational capacity building for identified target groups

Technical trainings for identified target groups in topics related to climate-smart agriculture will be conducted.

The project will organize for the famer's groups, practical training on various topics. In this sense the producers will be trained on the following agricultural practices:

- The Zai technique, a technique that allows to retrieve soil degradation;
- The transversal tillage, a technique that limits the flow of water losses;
- Rotation and association of cultures;
- Management of water and infrastructures of irrigation;
- New system of intensive production of rice (SRI)
- Fertilizer and pesticides use;

Training will be organized in the intervention areas. These courses will be in the first and second year of project start. An evaluation is conducted at the end of training to measure the degree of assimilation of beneficiary groups. These courses should lead to the establishment,

in every village or planning area, a monitoring committee of hydraulic structures and water management, a land management committee and production. The various training courses will be implemented by government and non-governmental actors whose technical capacity was strengthened under activity 1.1.2. Good practice guides or manuals will be designed in Portuguese in the form of pamphlets and translated into local languages (creole, Manding and Peulh) for a better understanding by farmers.

During the consultation phase, the farmers have expressed the need to strengthen their organizational capacity for better management of the adaptative actions. In this context, the project will seek to better organize the beneficiaries to develop and focus on interactions with organizations and farmers groups with villages at which management is often too heavy. Women, youth and men already working individually on the areas planned for development will be encouraged to organize themselves into groups. Capacities building will focus on: (i) the establishment of farm groups, (ii) management and operation of groups; (lii) the technical, organizational and financial groups.

Output 1.2.2 Technical assistance and rural extension for subprojects

Technical assistance for implementation of activities of the subprojects will be carried out under this output. The technical assistance integrates sharing, demonstration and implementation of climate-smart agriculture management techniques, including livestock. Particular focus is on training agroforestry and conservation agriculture methods that reduce soil disturbance, focus on retention of crop residues and other surface cover, promote crop rotation and seed control, therefore stabilizing production and income as well as reducing environmental pressures. Small-scale market development and efficient water use will also be included in the training programs. The rural extension team will integrate specialists for each of the project's key areas, including agriculture and water resources.

Field extension officers will furthermore provide to seasonal forecasts to the communities and help farmers to use the information properly to increase productivity and food security. Forecasts will be presented before the rainy season, and will include an evaluation of previous seasonal forecast as well as possible harmonization with traditional forecasts. Farmers in each tabanca will be trained in using rain gauges to keep a record of rainfalls to identify possibly changing rainfall patterns in the community, as well as to identify the best possible planting days. The project will also engage in training of young men and female to undertake smaller maintenances of project infrastructure, thus also contributing to local capacity building and empowerment.

Output 1.2.3. Formulation/Update of contingency plans for climate-risk management

The project's contingency plans are planned to cover extreme weather events and their impacts, particularly floods. A general contingency plan will be elaborated for the project. After their validated, the contingency plan will be adapted at each intervention site. 21 contingency plans will be adapted. Each contingency plan will be updated by field extension officers in direct collaboration with each community. Participation of women and other vulnerable community members will be particularly promoted.

The technical capacities for a better operationalization of these contingency plans will be conducted. Two workshops will be organized (one in Gabù and one in Bafatà). This will be done by the Civil Protection Division. They will bring together the local services of the intervention regions, the famers groups and the local administrative authorities.

Output 1.2.4. Support for famers groups for adaptation actions implementation

Participative development of on-site agricultural and water-management adaptation actions, where the precise adaptation strategy choice will be made by the communities themselves – following the example from the World Bank's approach and that of others, which do not specify activities before workshops, NGO projects and a typology list of activities that could be discussed at community level during the project. Adaptation actions will thus be detailed once the project starts.

- Supprot by the government technical experts

Farmers groups and breeders (men and women) will also be trained on the techniques of production of organic fertilizers and briquettes of excrement of livestock. At least 200 farmers will be trained in this technique. Every breeder will produce on average 1.5 tons of organic fertilizer. This action will reduce the need for chemical fertilizers ulilization and the operating costs of the landscaped perimeters.

The project will enhance capacities of the beneficiaries on dissemination and strengthening of climate-smart agriculture practices; risks related to slash-and-burn agriculture management; irrigated agriculture interventions; use of agroforestry methods; crop rotation; soil fertility maintenance and higher soil moisture retention; etc. Theses activities will be conducted with the support of Agricultural and hydraulic decentralized technical services.

To ensure that the adaptation, environmental and social and gender dimensions are adequately taken into account and thus ensure the implementation of the environmental project and social management plan, it is necessary to strengthen the technical and institutional capacities of the State services which will be involved in the implementation of the project. These include deconcentrated services in charge of the environment, agriculture, livestock, plant protection, forestry, hydraulics. The training workshops will be organized on site led by the PMU, which has a Climate and Environmental Capacity Building Officer in collaboration with the Competent Environmental Assessment Authority (AAAC). An environmental monitoring program will be established and will focus on monitoring, supervision, mid-term evaluation and annual assessment. It should be noted that the perimeters development will require the use of pesticides to prevent and control crop pests. These products pose risks to the environment and human health. It is therefore necessary to strengthen the capacities of producers in the application and management of pesticides in order to minimize these risks. In order to do this, the project will first develop a guide to good and manage fertilizers and pesticides. These guides will be elaborated in the first year of the project and will be followed, if necessary, according to the observed changes. Good practice guides will be designed in pamphlets and translated into local languages (creole, Manding and Peulh) for a better understanding and better use by farmers. In the second year during which the sites can be developed after construction of the structures, training on good agricultural practices preserving the environment and methods and techniques for managing pests, pesticides and fertilizers will be organized in the areas housing the villages of the project. Thesetraining will focused on: (i) information on the risks and health and safety advice. (ii) basic knowledge on handling and risk management procedures; (iii) the wearing of protection and security equipment; (iv) the risks associated with the transport of pesticides; (v) procedures for handling, loading and unloading; (vi) the storage of pesticides in farm; (vii) the management of packaging and used pesticides; (viii) the management of cases of accidental application of

pesticides; (ix) the outline of the process of treatment and operation; (x) health and safety in relation to operations; (xi) the emergency measures and emergency pesticides poisoning; (xii) the maintenance of the equipment. These activities will be conducted by the Plant Protection Service in collaboration with the Competent Environmental Assessment Authority (AAAC).

- Proximity support by site facilitators or animators

To ensure efficiency in the implementation of the adaptation actions of the project, daily support will be provided to the farmers by the project through facilitators or animators¹⁰. These animators who have a good command of the promoted farming practices, will be in constant contact with producers in the field to ensure adequate resilient practices implementation. In addition, they will help for collecting data of the project on the sites (the actions taken, the problems occurred, the benefits, the needs for the next step, etc.). These data will be transmitted to the national coordination through the regional technical coordinators for the purposes of the development of quarterly and annual reports. This will allow to measure the degree of adoption practices and progressive appropriation of the promoted resiliences techniques during project implementation.

Output 1.2.5. Capacity building to prevent forest fires

The project will engage in capacity building for rural forest fires; namely in (i) organizing rural fire brigades, (ii) train them to combat forest fires that endanger agricultural production and biodiversity in the project region, (iii) provide them with tools to do so, (iv) sensitize fire brigades on good practices to avoid fire, and (v) train fire brigades to sensitize rural populations (including coal miners, palm wine producers, hunters, breeders, farmers, etc..) before any drought season on fire risks and good practices to avoid them. This part of the project will include the development and dissemination of simple rules, such as avoiding smoking in forests, good practices for palm wine production (which requires fire) or teaching hunters to build low-risk fires while in the forests. Finally, forest fires will also be covered by the project's contingency plans for climate risk management. The project will also enhanced the capacity of the committees of vigilance of fire at the regional level. Exchanges will be organized between fire vigilance committees to share their experiences in this area. The composition of these committees will be reviewed for active involvement of women.

Still in the sense of contributing to forest protection, the project will organize sensitization for local communities on sustainable management of forest resources. Within the project, it will be organized awareness campaigns to communities based on importance of forests in the fight against climate change and the improvement of their living conditions. The aim is to encourage a strong involvement of local communities in forest management and to help them to become the main actors for forest protection. Indeed, forest resources can not be sustained if rural communities are not directly involved in its management and are not aware of their use and benefits they can derive. The project has, through awareness change operating modes of forest resources. Thus every village will be organized twice a year for an awareness of the people including coal miners, palm wine producers, hunters, breeders, farmers, etc. The sensitization will be conducted by NGOs under the supervision of fire brigades and others services relevant the forest protection. These will be NGOs working in the forest protection and which will be selected on the basis of predefined criteria.

To overcome this output, the technical and organizational capacities of Rural Climate Change Forum (RCCF) and Environmental vigilance committees for better operationalization will be

¹⁰ These will be recruited in the areas of interventions based on the CV after a call for applications. A total of 15 animators will be supported the producers in the implementation of adaptation actions.

enhanced. Rural Climate Exchange Forum (RCCF) and Environmental Vigilance Committees (ARC) are committees that have been set up to promote exchanges related respectively to the climate and the environment. These two committees are complementary and trained actors of the sectors of agriculture, water, farming, forestry, representatives of the local population especially vulnerable groups. The RCCF and CRA are platforms for Exchange, sharing of information and experiences in various areas including climate. However, in view of the technical and financial shortcomings, their interventions are very limited. The project includes support to the RCCF and the CRA for their better operationalization.

Component 2: Enhance the resilience of existing agricultural productive systems, including water control and management measures

This component focuses on household-/village-level interventions in climate-smart agriculture practices in order to minimize damages from climatic change and variability, as well as to contribute to agricultural and rural livelihood development. In this, the project is to take advantage of 'windows of opportunity' for adaptation: for example, agriculture in the country is still largely organic, and relies on farmer's own seeds for cultivation. Agro-ecological approaches thus have a high potential, including in national adaptation strategies or policy design. While component #1 serves as a key input for pre-selecting project sites, all field activities of project implementation will be carried out in this component.

Table 8: Simulated mean benefit for different cro	op management adaptations
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Management option	Cultivar adjustment (n=56)	Planting date adjustment (n=19)	Planting date and cultivar adjustment (n=152)	Irrigation optimization (n=17)	Fertilizer optimization (n=10)	Other (n=9)
Benefit (%) from using adaptation	23 (6.8, 35.9)	3 (2.1, 8.3)	17 (9.9, 26.1)	3.2 (2, 8.2)	1 (0.25, 4.8)	6,45 (3.2, 12.8)

Source: Porter et al. (2014). Difference between the yield change from baseline for the adapted and non-adapted cases. N represents the number of estimates used for each adaptation. The numbers in parentheses are the 25th and 75th percentiles.

The table above is taking from the IPCC AR5 chapter on food security and food systems (Porter et al., 2014) and summarizes the mean impact of different adaptation actions on increasing crop yield/reducing climatic impacts on crop yields. While the exact impacts are site-specific, the table shows that small-scale incremental or systemic adaptations such planting date adjustment and/or cultivar adjustment can be very effective for promoting climate resilience.

With regards to water resources the problems with agricultural water management in dryland East Guinea-Bissau are becoming more severe due to climate change. The problems involve drought (acute and seasonal) as well as inundation and flooding of villages and swamp rice fields due to intense periods of rain. Saline water intrusion (more frequent due to sea level rise) is a potential further problem: it affect the existing rice crop as rice is not halophytic, thus leading to losses or a decline in harvest, but more importantly it can also salinize the soil limiting future production. This process can lead to abandonment of rice paddies, displacement of farmers and their families and threats further mangrove destruction to create new paddies. In summary, different approaches to make water control and management more resilient to the future climate changes are required; from water management techniques to the construction of mini-water retention and small reservoirs to preserve water and agricultural production to drainage dykes and channels to minimize flooding damage on crops and other infrastructure.

Under this component, one outcome is expected.

Outcome 2.1: Agricultural and livestock activities are climate-smart and contribute to sustainable increases in productivity and enhance national food security

Planned interventions will be at the farm, or a small of farming community level. All interventions undertaken will focus on principles of climate-smart agriculture, i.e. contributing to productivity, resilience and adaptation, climate change mitigation as well as food security and other development goals.

The project will intervene on sites that are being exploited by the population using traditional techniques. On these sites, rice and vegetable crops, the main ones being potatoes, tomatoes and onions, have traditionally been developed. These producers will be maintained at the sites as part of the project. No expropriation or relocation of producers will be undertaken. On the contrary, the farmers will benefit from the extension of the areas to be exploited, the improvement of soil quality, the support for the acquisition of quality fertilizers and pesticides and the protection of the areas against silting and flooding to improve crop yields and agriculture production.

This outcome aims to develop among others : (i) 1362 ha of irrigated rice, 400 ha of gardens with potatoe, Tomato, Onio, etc. The production of the rice and vegetables will be used to secured the rice needs for 41 316 persons ; (ii) 1000 hectares pilot pasture for 1000 breeders groups of 6 persons or 1,000 families of breeders of 6 persons (i.e 6000 beneficiairies) ; and (ii) 30 drillings for domestic and livestock water supply (1200 other households, i.e 7200 persons, outside the beneficiaries of the irrigation and livestock activities, will benefit these water supply infrastructures).

In fact, Guinea-Bissau's Second National Communication to the UNFCCC (SEAT/DGA and Republic of Guinea-Bissau, 2011) and NAPA (Republic of Guinea-Bissau, 2006) highlight the relevant plans and policies for agricultural development and water resources management, where the construction of small-scale water retention considered as an important adaptation activity to increase resilience of cropping systems. The National Plan of Agricultural Investment (PNIA, 2013) further promotes the adoption of integrated water resources management (IWRM). Existing land use or water management plans (national or regional) currently do not cover downstream harm of small scale water retention. It is frequent that traditional legislation that is not documented but used by the heads of the villages is applied. Identification of environmental conflicts, their mediation or possibilities for compensation are regulated in the Land Law (5/98, 1998) and Water Code (5a-92, 1992). In particular, the Law on Environmental Impact Assessment (EIA) (10/2010) rules that projects with expected significant adverse impacts on the environment do require the application of an EIA. This document needs to provide for a clear analysis of environmental impacts and risks, comparison of alternatives and mitigation action, including in non-technical language.

Downstream harm small-scale water retention are potentially covered through the EIA Law but there are no universal methodologies available per project type that could be applied (see National Plan on Environmental Management, PNGA). In this background the project will work together with the Service responsible for the hydraulic efficiency of the construction of rural infrastructure as wells and mini-water retention in order to develop respected standards for prevention of downstream harm in Guinea-Bissau. These standards will be based on the environmental and social safeguards, including gender mainstreaming policy, of the West African Development Bank (BOAD) and GEF as well as relevant national environmental and social regulations. Traditional authorities will be involved in projects, not limited to land management. Based on initial scoping studies (see Part II.H), review of climate change adaptation literature, and lessons learned from project GEF/UNDP-00077229 the following activities of adaptation are currently being considered for implementation:

- Development of lowlands to maintain agricultural production in drought periods ;
- Construction of mini-dams for irrigation of rice and vegetable crops. While these are more 'costly' items and likely not feasible in each and every village, many villagers see this as a potential major improvement in the quality of life. The project will take care that villagers will take ownership of the mini-dams and be sufficiently organized to secure their maintenance;
- Rehabilitation of soil and pasture productivity before planting through agro-hydro management, including small-scale investments into machinery and tools (e.g. tractor, fuel);
- Construction of drillings and ramps for supplying livestock with water. This will take into account development needs while taking extreme climatic conditions into consideration.

Output 2.1.1: Development of lowlands to maintain agricultural production in drought periods

This activity concerns: (i) Development of lowlands in the framework of the adaptation fund project; and (ii) Scaling up of partially developed sites within the old LDCF project.

2.1.1.1. Development of lowlands in the framework of the adaptation fund project

There is two type of low lands in the framework of the adaptation fund project: the lowlands in the downstream of the micro dams which will be built to control the flood and to maintain water need of the vegetables in drought periods and the simple lowlands without micro dams on which the planning will help to evacuate the excess water in rainy season and control silting. This type of development consists of: (i) the construction of dykes and bunds following the contour level; (ii) the construction of erosion-control dykes for lowland areas at high risk of silting by the flow of rainwater; and (iii) work related to the protection of catchments against silting in the lowlands. For this type of simple development, rice is irrigated by flooding plots through dikes and bunds constructed along contour level. The land is carefully leveled at the level of each parcel which size does not exceed 250m². The different components are:

- **Dykes and bunds** which function is to allow an early flooding of traps, in order to ensure the necessary level of submersion and an independent management of water between traps of the same plot. They are positioned perpendicular to the flows and made with an important component of clay in order to obtain a good consistency that resists water run-off.
- **Erosion-control dykes** will be positioned on each bank of the perimeter. Their function is to prevent the arrival, in the lowlands, of sand resulting from the continuous erosion of the immediate slopes of the lowlands, to contribute to the conservation of the physical characteristics of the soils of the valley and to the reduction of the invasion of weeds. The rills obtained at the upstream side from digging, a trench to construct these dikes, will be used to channel the water of the slopes towards the collector with discharges every 200 m approximately if there is no thalweg or natural tributary for this purpose. The dikes will be constructed with an important component of clay in order to obtain a good consistency to resist water flow. The equipment and working conditions should be designed in such a way as to allow the creation of homogeneous layers with a maximum thickness of 20 cm.

- Development of the catchments against the silting up of the lowlands: The silting of the lowlands is one of the constraints for the development of the rice production. It contributes to the reduction of the soil water retention capacity, the change in its physical structure and finally its production capacity. The protection of catchments thus becomes more of a obligatory activity for the conservation of lowlands. Within the framework of the project, development work will be carried out on the plateau surrounding the rice fields in order to avoid, in the long term, their silting up. To do this, a landscaping of at least 30 meters wide will be created by planting utility trees (fruit trees, medicinal trees, service woods, firewood, forage plants, nutritional plants such as Moringa). The implementation of these activities could be entrusted to the beneficiaries under the technical supervision of the Directorate General of Water and Forests. The Project, through this Directorate General, would be responsible for supplying seedlings and monitoring the reforestation process.

A total of 1000 hectares of lowlands will be developed. The technical characteristics of the structures, the details of construction and the type of hydraulic infrastructure required for the development will be defined based on detailed hydrological and hydraulic studies.

2.1.1.2. Scaling up of partially developed sites within the LDCF project



As part of the LDCF project, micro dams was built.

Partial view of micro dam built in Bajocunda at the end of 2016 to control flood and used like a bridge

14 sites totaling 662 ha have been partially developed. Dykes and earth bunds were built.



Partially developed lowlands within the LDCF project

But the developments were not carried out in ways that exploit the lowlands' downstream. Interventions on these sites will therefore consist of: (i) the spacing of lowlands for their development and; (ii) the protection of lowlands against silting.

- **Spacing of lowlands:** it will consist of installing 250 m² traps, isolating them and bringing water with pipes to ensure irrigation of crops downstream of the infrastructures in place. The purpose of the embankment dikes is to facilitate the retention, distribution and management of irrigation water in plots, to delay the rainwater run-off process, to regulate the water level in the plots, and to allow independent management between plots;
- **Development of catchment against silting in lowlands**: activities that protect sites against silting will be carried out as described under the arrangements of the activity 2.1.1.1..

Output 2.1.2: Construction of micro-dams for irrigation of rice, vegetable crops and livestock water supply

To combat flood and drought, micro dams for water storage will be constructed to preserve water, by sustainable manner, within the agricultural systems. The micro dams will be built on selected low lands under flood prone areas. The constructions will use simple technology. This will ensure that the project beneficiaries (local farmers) are able to manage post-project repairs and maintenance after the project is completed. In addition to these water storage facilities, simple irrigation systems will be designed to maintain the required moisture level in the fields/paddies. The infrastructures design will ensure an appropriate spreading of the water on the surfaces (plots) to ensure the development of the crops and improve yield.

A total of 20 micro-dams will be built. The technical characteristics of the structures, the details of construction and the type of hydraulic infrastructure required for the development will be defined based on a detailed hydrological and hydraulic studies.

2.1.2.1: Construction of micro-dams

Taking into consideration the characteristics of the potential sites pre-selected during the preliminary field studies, these infrastructures will be used to promote : irrigation and livestock water supply.

The infrastructures consists of: (i) construction of the water retention micro dam with a weir threshold; (ii) excavation of the basin; (iii) the construction of ramps for access to water; and (iv) protections against silting.

- Water retention micro dams: They will fulfill two important functions, namely: (i) retaining upstream water; and (ii) used like a bridge to open the villages on either side of the shoreline. The embankment materials for the retention dam are derived from gravel embankments or lateritic clays devoid of plant materials. The embankment of the dam must be compacted by a mechanical machine at 90% of the Optimum Proctor Normal (OPN). It is composed of gravelly or lateritic clays with possibly a central core of non-inflatable clay. Attention should be given to the implementation of this embankment so that it can play its full role. The maximum height of retention dams shall not exceed 3 meters;
- water retention Basins: the construction of ponds consists of excavation, transport of excavated material, protection of embankments, compaction and protection of the ramp. And, to steer the herds, ramps will be limited by the barriers of steel wire.
- **Gabions**: as thresholds, the will be built at the upstream of the dams, following the curves of level, to strengthen the infiltration of water in the soil, break the strength of water currents and retain sediment that may fill the ponds at an early stage.
- The development of catchment against the silting of the basin: the activities of protection of the basin against the silting up will be carried out as described under activity 2.1.1.1.

2.1.2.2. The construction of simple irrigation systems

The purpose of this type of development is to: (i) adjust the water level in the perimeter; (ii) drain excess water during heavy rains; (iii) distributing water in plots, and (iv) irrigating plots during the rainfall deficit.

The development involving partial control consists of: (i) construction of main and/or retention dikes; (ii) the construction of the main and secondary canals; (iii) construction of regulation facilities; (iv) the construction of the embankment dams and; (v) protection of catchments. The development plan to be adopted involves partial control of water with several hydraulic facilities (road dams and / or retention, culverts with sluice gates, purging dams, erosion control dams, contour dams, collectors (drainage channels) equipped with water level control systems, irrigation channels, etc.). These developments will aim, as appropriate, to: (i) reduce the level of flooding in the paddy field and drain surplus water during heavy rains; (ii) regulate the water level in the perimeter; (iii) distribute the water in the plots and encourage spreading, as well as maintaining a water slide in the basins. The development should be designed so that it can irrigate rice throughout the vegetative period, evacuate critical floods during heavy rains, avoid flooding and maintain a water supply cultures. The role of each facility is described below:

- **Collectors (drainage channels):** the functions will be to allow the drainage of the developed perimeters and the evacuation of the floods. They must be designed so that they can serve the entire perimeter. They will be of trapezoidal section and the materials coming from the cuttings are deposited to form a dyke on each bank. The two

parallel dikes will be sized so that they can be used as access to the plots, facilitate movement along the collectors and resist flooding and overflow;

- Scuppers and / or PVC pipes: they will be positioned at the collectors (drainage channels) under the micro dam and will allow the passage of floods. They will be equipped with devices to control the level of water upstream in the form of cofferdam. They also have a function of maintaining the level of the tablecloth high enough in the rice fields when the cofferdams are placed. The size of the scuppers and / or the number of pipes depends on the volume of water to be evacuated. The pipes are installed under and perpendicular to the retention dam;
- Water Intake structures: their main function is to contribute to the satisfaction of the water needs of the crops. Normally they are intended for lowlands with a steep longitudinal slope where retention dykes dominate very few areas. These structures make it possible to raise the water level and to divert part of the superficial flows channeled into the collector (drainage channel) either into one or two irrigation canals or directly into the plot to satisfy the water needs of the crops per the configuration of the plots. They also have a function of maintaining the level of the aquifer high enough in the plots when the cofferdams are placed;
- Irrigation and / or drainage canals: these are earth ducts resulting from excavation of the embankment dams in accordance with the type plan mainly responsible for conveying the flow from the water intake to the plots and / or facilitate the evacuation of surplus rainwater. These are facilities that will generally fulfill two important functions: (i) the retention and flooding of upstream rice plots and (ii) the disenchantment of villages on either side of the banks of the lowlands. The embankment materials for the retention dam are derived from irrigation canal debris deposited for the formation of a dike. The retention dykes will be made with an important component of clay to obtain a good consistency. They will be compacted manually using daggers to resist runoff. The retention dams must be installed so that they are perpendicular to the flow (to the collector). Their implementation and exact layout will be confirmed during the execution of the work by the operators and with the help of a topographer.
- **Erosion control dykes**: positioned on each bank of the perimeter, the erosion control dykes have the function of preventing the arrival, in the lowlands, of sand resulting from the continuous erosion of the immediate slopes of the bottoms—thus, contributing to the conservation of the physical characteristics of the soils of the valley and the decrease in the invasion of weeds (see description in 2.1.1.1.);
- Levee dikes: the function of the dikes is to facilitate the retention, distribution and management of the irrigation water in the plots, to delay the process, the flow of rainwater, the regulation of the water level in the plots, and the possibility of independent management between the plots. The levee dykes will be made with an important component of clay to obtain a good consistency. They will be compacted manually using daggers to resist runoff. Their implementation and exact layout will be confirmed during the execution of the work by the operators and with the help of a topographer;
- **Compartmental bunds along the contours levels**: positioned perpendicular to the levee dykes, their function is to allow early flooding of the traps, to ensure the necessary level of submersion and independent water management between pots within the same plot. The dikes will be constructed with a significant component of clay to obtain a good consistency to resist runoff;
- Arrangement of catchments to avoid silting in lowlands: the activities to protect sites against silting will be conducted as described under the point 2.1.1.1.

Output 2.1.3.: Rehabilitation/improvement of soil and pasture productivity and smallscale investments into agriculture inputs, machinery and tools

The activities to contribute to the improvement of the quality of the soil, the agricultural yield and the pasture will be conducted under this output. It is: (i) sensitization/Education about the harms of slash and burn agriculture practice on soil fertility and crop yields and dissemination and strengthening of climate-smart agriculture practices; (ii) Support to access improved, resistant and short cycle seeds ; (iii) Support to groups for the acquisition of quality fertilizers and pesticide ; (iv) support for the production of forage for livestock (Cultivation of brachiaria, moringa, fruit trees, etc.) and increase organic manure production; (v) support for the acquisition of equipment/facilities of production and development of products for demonstration.

2.1.3.1. Sensitization/Education about the harms of slash and burn agriculture practice on soil fertility and crop yields and dissemination and strengthening of climatesmart agriculture practices

Marginal land use profitability and ongoing land degradation cause severe problems for farmers, perpetuating the poverty cycle and exhausting natural resources. Current itinerant slash-and-burn agricultural practices in the project region are connected to soil erosion, loss of soil nutrients and drying up of springs, and have a negative effect on productivity of rice and other crops. The project will address risks related to slash-and-burn agriculture through four integrated strategies: (a) focus on irrigated agriculture interventions, which will directly reduce pressures on land clearance, and therefore necessity to practice slash-and-burn agriculture; (b) use of agroforestry interventions, where farmers know that they cannot practice slash-andburn agriculture in such fields or orchards; (c) dissemination and strengthening of climatesmart agriculture practices. This particularly includes agroforestry and conservation agriculture methods, i.e. methods which minimize soil disturbances, utilize retention of crop residues and other surface cover, and promote crop rotation. While the focus of these measures is to contribute to stabilization of production and incomes, there are also important benefits to be realized with regards to reducing slash-and-burn agriculture and forest fires: (i) by creating buffers against drought impacts (through higher soil moisture retention); (ii) by recomposition of soil fertility; (iii) through lower fallow periods, thus directly reducing needs for slash-and-burn agriculture; and (iv) the possibility to work on any given cultivated field for much longer periods than would be possible under slash-and-burn agriculture (due to soil fertility maintenance and higher soil moisture retention).

The project will support the groups in the ploughing through mechanized during the first two years of the start of production means. This will make the soil easier to plow in the coming years through animal traction and the use of small tillers.

2.1.3.2. Support to access improved, resistant and short cycle seeds

Adequate access improved seeds increase agriculture yields. In the project area the producers do not have access to quality and certified seeds. This has implications for agriculture yields. The average agricultural yield is 600 kg / ha on average in current practices and traditional seeds.

The project will introduce in collaboration with the National Institute of the agrarian research (INPA), the improved seeds of rice with yields ranging from 5 to 6 t/ha on average and for others improved seeds. To ensure the availability of improved seeds the project will sign a Memorandum of understanding with the INPA for the provision of the improved seed, at the start of the project. The INPA will support the project in the development of improved seed banks and in the training of the groups on these seeds multiplication techniques while ensuring the ownership of the activities by the producers. Producers will continue to produce the seeds improved in the following years on their plots with the close monitoring of the INPA. One to two seed banks, these will be strengthened to meet the needs of producers.

2.1.3.3. Support to groups for the acquisition of quality fertilizers, quality pesticide and crops conservation

Access and use of good quality fertilizers and pesticides increase agricultural production. In the project area the access of producers to quality and certified fertilizers and pesticides is limited. This has implications for production. Thus, in the first year of development, the project will support agricultural groups that do not have sufficient resources to acquire fertilizers and pesticides. Their acquisition during the next crops campaigns will be supported by producers who have already made profits in the first crop year. To ensure that the groups will continue to source quality pesticides and chemicals fertilizers, the PMU will bring producer groups into contact with fertilizer and pesticide supply structures. The project will support the farmers crops conservation initiatives.

2.1.3.4. Support for the production of forage for livestock (Cultivation of brachiaria, moringa, fruit trees, etc,) and increase organic manure production

Gabu and Bafata regions are home respectively 47% and 19% of the livestock of Guinea Bissau (for a total of 66%). However, the drought and the lack of forage limit the development of this livestock during the dry season in these parts of the country. The result is the migration of farmers to the South of the country and the conflicts between breeders and farmers. So, the project will provide support to farmers in the production of brachiaria, a fodder plant adapted already experiented by the LDCF project in the Gabù region. The project will support the installation of brachiaria fields in each area of intervention at the rate of 10 hectares of pasture for pilot group of 50 heads of beef or 200 heads of small ruminants. Breeders will be trained on the production of the brachiaria technques. These first brachiaria fields will produce seed for sowing from the rest of the pasture. Others forage and nutrients species will be tested namely moringa and other legumes to improve soil quality and health of livestock. Altogether, 1,000 hectares (100 units of 10 hectares) of pasture will be developed and 100 sheds will be built in each area to keep forage.

Grazing conducted in these fields will help to improve the soil that will be available for agriculture after three to four years. The rotation will be opted in the development of these fields of grazing. These actions will help to increase the production of manure to reduce chemical fertilizer requirements. In fact, the famers and breeders groups whose capacities have been strengthened on the production of manure from livestock excrement (output 1.2.4), will produce organic fertilizer to subtitute the chemical fertilizers and reduce the need for these in agricultural production. This will have a strong impact in the presevation of soils.

The project will support the breeders' groups for their specialization in the production of brachiaria seeds and its expansion in order to sustain the actions of the project in each area.

These activities will be conducted with the support of private structures or NGOs who support their evidence in this area.

2.1.3.5. Support for the acquisition of equipment/facilities of production and development of products for demonstration

The project will support groups for the acquisition of materials and equipment for production and development of products. This was a request from beneficiaries populations during public consultations for the preparation of the Full project. Thus, the project will be available to groups of producers of tillers, the weeders, threshers and the hullers. Demonstrative title, 20 tillers, 1000 weeders and 20 hullers will be acquired. In addition, 60 farmers or groups of farmers practicing agriculture (farmers) will be supported for the promotion of culture with oxen and ploughs. The horse in harness culture will help to transport crops with carts.

Famers groups and breeders groupes financed in this framework will have to repay the costs of facilities in-kind (products) or species. Repaid funds will be reinvested in the project for the purchase of other equipment in case the tests will be conclusive or the development of other activities for the extension of the areas. A contract will bind the project and groups for this purpose.

The material and equipment acquired by the beneficiaries, will be leased to other beneficiaries, if possible.

The PMU will ensure that the beneficiary groups of these materials and equipment chosen on a competitive basis. Only well motivated and well organized groups will be beneficiary.

2.1.3.6. Support for the adaptation of the cultural calendar to climate disturbances

The project will work with weather services for reliable information to better plan agricultural production in relation to climatic changes. Support on site will be provided to farmers by the technical departments of meteorology. A Memorandum of understanding will therefore bind the project to the National Directorate of meteorology of Guinea Bissau. In order to have data rainfall specific areas of intervention and better plan agricultural campaigns, 120 rain gauges will be acquired and installed in the project area.

2.1.3.7. Support for the analysis of the quality of soil and water

Monitor soil and water quality will allow better planning of adaptation actions and preventing declining yields and certain diseases. Thus, the quality of soils and waters will be followed by technical services of the State namely by the Competent Environmental Assessment Authority (AAAC) and the national laboratories. Thus, the project will bring support for the AAAC in the acquisition of equipment for analysis and follow-up of the soil as well as water quality.

Output 2.1.4. Construction of drills/wells and ramps for improved livestock and domestic water supply and market gardens development

The problem of drinking water supply arises in the villages identified in the intervention regions of the project. The pricing of creeks as abridges also causes enormous problems for livestock farmers to catch livestock water. This forced them to head south in search of water and forage. Enormous losses are recorded and conflicts arise between breeders and farmers of offseason. Also, the project proposes to carry out actions to co-benefit water supply for

populations, livestock and for development of gardens. The actions envisaged are: (i) construction of drills/wells ; and (ii) construction of ramps to access Corubal River.

2.1.4.1. Construction of drills for improved livestock and domestic water supply and market gardens development

The project will carry out human-powered drilling to improve the availability of drinking water in villages and develop market gardens.

As far as market gardens are concerned, 20 wells will be built to promote the development of of 100 hectares, at least, of market gardeners. Crops with nutritional value will be developed according to local soil and / or climatic characteristics. This include, among other things the following speculation: tomato, onion, potato, pepper, cabbage, carrot, eggplant, okra, sweet potatoes, spinach, pepper, the cucumber.

Regarding domestic water supply, 10 drills will be built with drinking troughs for livestock. The Geotechnical studies will be conducted after drills realization.

2.1.4.2 . Construction of ramps for improved livestock and domestic water supply

This development consists in the construction of ramps to facilitate Corubal River access for livestock and population. Construction consists of excavation, transportation of the excavation, in the protection of the embankment, compaction and the protection of the ramp. And to guide the flocks, the ramps will be protected by barriers of steel wire. The project is planned to build 5 access ramps to the Corrubal River for livestock and domestic water supply. Specifications, construction details and plans type of ramps will be defined by detailed technical studies.

Component 3: Knowledge dissemination of lessons learned on climate-smart agriculture and adaptation planning

The objective is to develop and operationalize a system of communication and knowledge sharing for the adoption of good agricultural practices climatque resilient to change to support food sécuirité in Guinea Bissau and West Africa.

Outcomes of component #3 will thus be (1) adoption of sustainable climate-smart agricultural practices and risk management in comparable regions of Guinea-Bissau, contributing to resilience and development needs in those regions.

Outcome 3.1: Sustainable climate-smart agriculture practices and management is disseminated in comparable regions of the country and other West African countries

Output 3.1.1: Development of knowledge management strategy

In order to guarantee visibility of the project results a knowledge management strategy will be developed. Lessons learned will be of interest to Donors, Government, civil society and vulnerable populations. Knowledge sharing and learning will count on a project knowledge management strategy, with communication products tailored for different target groups (including hard copies, electronic form), alternative communication means such as community theatre, radio and story-telling, project website, technical reports and documents on lessons learned to UNDP's Adaptation Learning Mechanism (ALM) and other relevant platforms, hands-on study visits and annual RCCF meetings to join and share experiences with Gabú and Bafatá farmers. The project will target existing institutions and fora (e.g. RCCF, inter-

ministerial committees) and contribute to the strengthening of subproject replication under GEF/UNDP-00077229, thus contributing to increased capacity in adaptation practices and policy in the focal area of climate-smart agriculture and resilience.

The project will also establish a program of outreach and dissemination of radio programs on topics related to climate change, gender and HIV/AIDS, to the rational management of natural resources. Awareness campaigns will be conducted twice per year in each beneficiary village.

The radio broadcasts will expand the impact of the project scope. The project will include in the knowledge dissemination strategy, community structures at the local level.

If necessary, training will be given to the Member of the PMU especially the head of communications for better internal and external communication of the results and lessons learned from the project.

Output 3.1.2: Developpement and animation of project website

To facilitate access to project information by the public, a website dedicated to the project will be created. The results (outputs, outcomes and impacts) and lessons learned from implementation and the various reports will be shared/disseminated on the project website. This site will be animated by a set of actors.

In addition to this website, a platform of exchanges will be created to allow the various actors to participate in the discussions relating to climate change and fast actions that can mass.

Output 3.1.3: Development of manual and other materials on best practices and measures for climate-smart agriculture

The core dissemination product from the project will be a manual of practical and concrete best-practice in climate resilient agriculture. Various versions of the Manual will be produced, both technical and non-technical, in Portuguese, French, English and local languages (creole, mandingue, peulhs), as well as smaller summary briefing sheets/pamphlets/calendars on relevant thematic topics. The manual will be disseminated through the project website and a suite of workshops at the national and provincial level. In addition dissemination will take place across the West Africa region through workshops and dissemination of hard copies. The project team will further interact with national media outlets (newspaper, internet, radio, etc.) to make the public aware of climate risks and adaptation needs. Scientific publications with regards to impact assessment of components #2 is also planned. Finally, the project results will also be shared through international fora on climate change (including, in particular, UNFCCC).

Output 3.1.4: Dissemination of results to other regions of Guinea-Bissau and West Africa

The lessons learned are used to strengthen climate-smart agriculture in Guinea-Bissau. Interesting results and new lessons are expected from result the implementation of the project regarding (i) climate-smart agriculture, and its linkages to climate adaptation, water resources management, sustainable use of natural resources, and buffer against drought impacts; (ii) managing climate risk through contingency plans (contingency plans for crop and livestock management, seasonal forecasts for adapting planting calendars, protection against impacts from extreme weather events, such as flash floods or forest fires – i.e. contingency plans to protect interventions carried out under Component 2 as well as contingency plans to protect human life directly against adverse impacts from extreme weather events); and (iii) mainstreaming of adaptation into development planning, taking into consideration that this project is the continuity of a pilot project at national level (GEF/UNDP-00077229). Reflections

will also include (iv) identified project weaknesses in order to propose new solutions for new beneficiaries of other projects.

Note that the knowledge dissemination to other West African countries will be based on internet communication and website information.

Given that communication channels with other West African countries have already been established through GEF/UNDP-00077229 project this new focus will only have limited impact on the project's outreach activities.

B. Describe how the project / program provides economic, social and environmental benefits, particularly in the most vulnerable communities and vulnerable groups within communities, including gender considerations. Describe how the project / program will avoid or mitigate negative impacts, in the respect of the environment and social policy of the Adaptation Fund.

East Guinea-Bissau is a dryland region which is extremely vulnerable to climatic change and variability. Family farmers' coping mechanisms in Gabú and Bafatá 'regions' (temporary nomadism, reduction of food intake, cashew as only cash crop, selling of household assets, migration to cities, etc.) are insufficient even under current climatic variability (dry and wet seasons) and extreme events (droughts, inundations, etc.), and given their scarce assets (economic, financial, education, etc.), an autonomous uptake of sustainable water and agriculture technologies and practices (i.e. climate-smart agriculture) which would permit them to improve their livelihoods is highly unlikely in absence of the project's interventions.

In this context, the project's components will provide economic, environmental and social benefits to the communities in Gabú and Bafatá, particularly to farmers more at risk.

Environmental benefits

With respect to environmental sustainability, the project will reduce pressure on forest resources, deforestation and soil erosion through promotion of agro-ecological practices and 'environmental vigilance committees' (both implemented successfully under GEF/UNDP project 00077229) which monitor illegal deforestation, overuse of forest resources (e.g. hunting) or pollution of the environment, among other. These actions are particularly important in the context of forest resources sustainable management in the eastern hinterlands of Guinea-Bissau.

- Sustainable management of resources forestry

Activities to protect the perimeters through reforestation, bush fire control activities through the establishment and training of fire brigades, the fight against slash-and-burn agriculture, sensitization of people on the protection of forests are all activities that will enable the protection and sustainable management of forest resources.

- Sustainable management of water resources

The implementation of the water mobilization infrastructure and the technical and organizational support that will be provided by the project in the management of the perimeters will be beneficial for the sustainable management of water resources in the project areas.

- Improvement or maintenance of the quality of the soils

The implementation of soil conservation activities, the promotion of organic fertilization, awareness-raising for the reduction of slash-and-burn agriculture, the practice of livestock stabling, the promotion of the best cultivation techniques for soil conservation erosion-control and silting of perimeters activities, reforestation, etc. will improve the quality of the soil.

- Protection of water and soil resources through the improvement of producers' capacity in the management of pesticides and chemical fertilizers

Excess dosage, poor storage, poor knowledge of the persistence of pesticides or its accidental release into the environment may lead to infiltration of the active substance into soils, surface and subterranean waters. The various trainings and advisory support that will be provided to producers under the project will certainly strengthen the capacities and practices of producers on the plot of efficient and effective management of fertilizers and pesticides. This will preserve the environment including water and soils resources.

Socio-economic benefit

Economically, the interventions aim to improve and stabilize income from agricultural activities through diversification of income streams to farmers, with secondary economic benefits in the near- to mid-term through the strengthening of both 'regions' economies. Socially, the main benefits will be to stop the displacement of people, both by reducing susceptibility to extreme events, as well as through decreased need to move cattle herds temporarily due to low feed availability (caused by climatic events and/or overgrazing); reduced loss of livelihood security caused by extreme events or overall annual climatic variability would be an additional social benefit of the project. Specifically, the positive socio-economic impacts associated with the implementation of the project include (i) increased capacity of stakeholders for the development and implementation of resilient approaches to the adverse effects of climate change; (ii) job creation; (iii) contribution to food security; (iv) Improvement of women's incomes and development; (v) Improving the nutritional health of populations; (vi) Improvement of farmers' production and incomes; (vii) reducing the phenomenon of exodus and strengthening the family ties; (viii) improvement of community life; and (ix) contribution to the social organization of the community.

- Enhance the capacity of stakeholders for the development and implementation of resilient approaches to the adverse effects of climate change

The project is by nature a smart agriculture project that aims to reduce the vulnerability of agricultural systems against the adverse effects of climate change in the areas of intervention. The capacity-building activities of the stakeholders (producers, civil society and government agents), programmed within the framework of the project, will improve the capacities of all these actors in initiating and implementing approaches resilient to climate change.

All activities in the project component #2 will be developed jointly with the rural villagers and their representative institutions in order to create a shared understanding on climate adaptation; including the assessment of concerns and needs of the most vulnerable communities as identified under component #1. The team will initiate activities using diagnostic and rural planning techniques common in rural extension activities (PRA and RRA).

These capacity-building actions will also benefit women and young people by offering them a privileged opportunity to participate in a lucrative activity on a par with men and to improve their level of organization and involvement in decision-making.

- Creation of jobs

The activities related to the complementary studies, the construction of hydraulic structures (~ 15 % of the construction cost which is over 800 000 USD), the capacity building by the consultants, the salaries of the PMU which allow 654 000 USD, soil preparation, tillage and many other activities are likely to promote direct employment, mainly made up of local labor. Indirect jobs will be created along the procurement of fertilizers and commercialisation of agricultural products.

- Contribution to food security

The project will contribute to reducing risks related to food insecurity. Through the development of irrigated perimeters by water mobilization infrastructures for optimal irrigation, technical advisory support to producers, support for improved seed acquisition, dissemination of adapted cropping techniques, the project improves production both quantitatively and qualitatively. In the case of rice cultivation, agricultural yields will increase from 0.6 tonnes "without project" to 4 tonnes "with project". Other yields will increase from 10 tonnes to 25 tonnes for potatoes, from 8 tonnes to 23 tonnes for onions and from 8 tonnes to 24 tonnes for tomatoes. This will greatly reduce the food insecurity of beneficiaries.

Implementation of the project will increase the availability of rice as the main food of the population, potato, tomato and onion per the values mentioned in the tables below:

		Without project	With project	Added value with adaptation actions
Rice (1362 ha)	Yield (tonne / ha)	0.6	4	3.4
	Production of 1362 ha (tonne)	817.2	5448	4630.8
Potato (200 ha)	Yield (tonne / ha)	10	25	15
	Production of 200 ha (tonne)	2000	5000	3000
Tomato (100 ha)	Yield (tonne / ha)	8	23	15
	Production of 100 ha (tonne)	800	2300	1500
Onion (100 ha)	Yield (tonne / ha)	8	25	17
	Production of 100 ha (tonne)	800	2500	1700

The project will therefore generate a substantial gain in agricultural production, and thus contribute to enhancing food security.

- Women, children and the elderly improvement

Women, children and the elderly are frequently amongst the more vulnerable of the poor. Women in rural Guinea-Bissau are responsible for 55% of agricultural production, with their role especially important in the dry season when they focus on garden produce. There is further evidence that programs focused on women improve food security of their family more directly than those focused on men (Asian Development Bank and FAO, 2013). However, despite their important role in agriculture and for food security, gender issues are little considered in Guinea-Bissau's policy considerations. In the villages, their participation may be limited/suppressed where elders or religious leaders opine directly against women participation due to conflictions with traditional religious laws. The project team is aware of these problems, and will openly encourage women empowerment at all stages of the project; this includes (i) discussing the need to integrate women into projects with village elders and other leaders; (ii) opening subproject grants for women's associations for small equipements acquisition, i.e; (iii) strengthening their role in the relevant institutions on climate change in the region (particularly the Rural Forum on Climate Change – see section III); and (iv) promote their participation in broader land and water management issues which are traditionally led by male members of the tabancas. A mobilization of women was noted during the public consultations for the prepration of this full project. It's to be noted that, the womens are more involved in the cultivation of rice, the main food consumed by the 90% of the population in the project area.

- Improvement of the nutritional health of population

Diversification of production and improved yields will contribute to improved nutrition among beneficiaries. As a reminder, the means developed by farmers to cope with the lack of food are among others, the reduction of several meals, consumption of less preferred foods, reduction of food dishes of adults for the benefit of children. With the project, the latter will feed properly and they will be able diversify their food.

- Increase in producers' incomes

The increase in market gardening production should make it possible to improve the incomes of producers. The following table summarizes the expected revenues for the implementation of the project.

	Rice	Potato	Tomato	Onion	Total
Operating income with project (USD)	2 159 860	1 942 800	752 520	699 240	5 554 420
Operating income without the Adaptation Fund project (USD)	26 754	1 160 680	292 340	292 340	1 772 114
Value added to the project through implementation of adaptation Measures (USD)	2 133 106	782 120	460 180	406 900	3 782 306

This smart agriculture climate project will be cost-effective. The agriculture component can benefit from \$ USD 5 554 420 per year, considering the assistance of the Adapt Funds (AF). Without the project, this benefit is \$ 1 772 114 per year. Thus, the contribution of a climate-smart action for agriculture is 3 782 306 USD per year.

- Reduction of the phenomenon of exodus and reinforcement of the family ties

Migration and rural exodus represent a characteristic of population dynamics in North-eastern Guinea Bissau. This mobility during the dry season contributes to meet the basic needs of rural households. Thus, the development of irrigation as envisaged by the project will make it possible to curb mobility (migration and rural exodus), to restore the economic system in the beneficiary zones and to bring about a substantial qualitative improvement in living standards, and therefore place agricultural activity as a means of combating poverty, controlling migratory flows and preserving the family ties.

- Improvement of community life

The current context, characterized by the gradual disengagement of states, the implementation of the decentralization process, the empowerment of civil society and the strengthening of the role of the private sector, offers the rural world new perspectives and opportunities to participate in the definition of policies, strategies and projects and their implementation. For this reason, the activities of farmers' organizations are very diverse. They concern the development of agro-pastoral production, market gardening, fruit-growing, marketing and handicrafts, exploitation and processing of forest products, actions to manage natural resources and protect the environment. Thus, the interventions of the project will create a full involvement of farmers' organizations and thus allow the development of community life which is one of the key elements of the sustainability of all the actions planned within the framework of the project.

- Contribution to the social organization of the community

The impacts of the project on socio-cultural organization include:

- strengthening local farmers' groups or organizations;
- the social and institutional support that developed sites will induce;
- the establishment of management committee;
- strengthening capacity of farmers.

NGOs to be selected as partners for local implementation will have solid experience in these techniques, having used them with local communities in the area as they developed 'local tabanca development plans' during the last few years. Principles to be considered for local interventions will include, among other:

- Encouragement of participants to take responsibility;
- Respecting the diversity of the tabancas;
- Promote full participation;
- Reconciling different interests; and
- Involving multidisciplinary approaches and teams (on the project's technical side).

At national level, the Project Management Unit (PMU) should also pursue the inclusion of qualified women technical personnel into the project team. As such, the project is to make an important contribution to women empowerment in Guinea-Bissau, not limited to the project region.

In order to mitigate and/or avoid negative impacts and to improve positive impacts, specific indicators on key economic, social and environmental variables will be integrated in the results-framework, therefore assuring compliance with the Adaptation Fund's Environmental and Social Policy (ESP). These indicators are to be monitored and evaluated regularly throughout the project, and will be reported to the PMU in order to prevent violation. Field teams and PMU will regularly interact with the relevant persons and institutions in the project region and tabancas to resolve any possible conflicts.

C. Explain how the proposed project is a cost-effective or provide a cost benefit analysis.

Vulnerability to climate change is multi-faceted; this is why additionality to a socioeconomic baseline scenario is hard to prove. Furthermore, there are limited options for Bafatá and Gabú farmers in terms of alternative actions to build climate resilience in their agriculture and water

resources management. The project thus proposes a combination of strengthening rural livelihoods with integrated climate risk managed that take into account local development needs of the communities. Such incremental and/or systemic adaptations are being proposed and carried out by various international institutions, and follow the UNFCCC's recommendations on adaptation projects for LDCs (UNFCCC, 2010). While most of these adaptation projects currently address climate variability and not precisely future climate change, they follow clearly the adaptation concepts and planning related to recent UNFCCC and World Bank conceptions – particularly no-regret and low-regret strategies, and avoiding mal-adaptation (Adger et al., 2007; Barnett and O'Niell, 2010; Heltberg et al., 2009; UNFCCC, 2010).

All project interventions target the most vulnerable communities in the project region, some of whom have already been displaced, who produce considerable amounts of the countries' staple food crops and where the most vulnerable sector as identified in the NAPA is important in economic and social terms. Total investment of pilot activities will likely be around US\$200–250/inhabitant (based on GEF/UNFP project 00077229 preliminary estimates). As a matter of comparison, an adaptation project at community level run by the NGO Practical Action spent about \$150 per inhabitant in Pakistan, although population was more densely spaced in sites targeted and the project had a shorter duration. In a country like Guinea-Bissau, with rather high transaction costs and low pre-existing investments in rural areas, \$200–250/inhabitant in the Gabú and Bafatá region over a five-year period is quite reasonable, and the proposed adaptation measures (component #2) are deemed cost-effective. Furthermore, in order to assure effectiveness and efficiency, both costs and benefits of the particular technological interventions will be assessed at household and community-level before implementation (see Chambwera et al., 2014).

The proposed approach integrates urgent rural development needs (food security, income generation, sustainable use of natural resources, etc.) with climate risk management. While investments in small-scale infrastructure (e.g. irrigation or small dams) and technical assistance are necessary, but not sufficient for allowing rural populations to adapt sustainably to climate change, project outcomes (resilience) of this proposed project are nevertheless conditional on those investments. This is highlighted in Guinea-Bissau's Second National Communication to the UNFCCC (SEAT/DGA and Republic of Guinea-Bissau, 2011) and NAPA (Republic of Guinea-Bissau, 2006).

Planned actions and activities for this project proposal have been selected because of their cost-effectiveness. This is highlighted in the mid-term evaluation of the LDCF project (Quesne and Jandi, 2013) on which this present proposal is based. Four points support this argument: (1) it is found that the LDCF project appropriately addresses the priorities, institutional and structural needs identified in governmental institutions vis-à-vis the objectives and vision of national and regional policies, and vis-à-vis the needs and expectations of grassroots communities; (2) the thematic intervention are relevant for the project region of Gabú (14 villages) which identified as extremely vulnerable in terms of climatic and social aspects with low to very appropriate technology adoption (15% to >50%); (3) the logical intervention framework of the LDCF project - in the context of multiple stressors, climatic and non-climatic - is evaluated as clear and well-articulated with clear institutional responsibilities and a clear theory of change supporting this framework; and (4) financial and human resources are evaluated as being appropriately utilized for each LDCF project component. Therefore, evaluation concludes that "In view of the different activities funded and benefits and the level of achievement of expected effects [...], it is not clear that additional results could have been achieved with the same level of financial resource" (Quesne and Jandi, 2013, p. 32). This means that each work package in itself has proven to be cost-effective in terms of envisaged outputs.

In this background, the mid-term report of the LDCF project specifically recommended further extension related to dissemination and appropriation of modern farming techniques, improved water management, adoption of breeding techniques in villages in the project region. With regards to cost-effectiveness two important points are related to the distances between the villages which are quite large: (i) the operational difficulties for the project team, because the distances are guite long and it may therefore be difficult for the project team to cover the 14 sites with the means currently available to it; (ii) challenges for the dissemination and replication techniques and results of the project. The 14 villages being fairly remote, it is difficult for the project to get a critical mass of producers and farmers who have adopted the technology promoted and can thus disseminate within the region and the country. It would be wise that the approach of the new project to focus its interventions in neighboring villages which have not been affected by the LDCF project to achieve a critical mass of beneficiaries able to disseminate the acquired (Quesne and Jandi, 2013). The project proposed to the Adaptation Fund aims to address this concern by increasing the number of beneficiaries and tabancas, therefore decreasing cost per unit. In addition this proposal proposes to add small scale water retention, fire prevention and other relevant activities related to climate-smart agriculture in order to increase resilience and improve living conditions of farmers in Gabú and Bafatá. In order to keep transaction costs related to project implementation and technical assistance within safe limits, the project sites in Gabú and Bafatá 'regions' will be within maximum 6 hours travel of one another, and within 4 hours of Gabú administrative center. This means that efforts can be focused, and technical assistance can be located within a reachable distance (as opposed to being located in Bissau). For this the project team will apply, among other, remote sensing/GPS tools to minimize operational costs and therefore achieve higher cost-efficiency in the proposed Adaptation Fund project.

Other possibilities to achieve higher cost efficiency that arose from the LDCF project focused on further minimizing risks of "bad financial governance and corrupt practices" which could lead to a reduction in planned funding for each of the activities in the LDCF project. The positive mid-term evaluation for the LDCF project (Quesne and Jandi, 2013) noted that UNDP has provided all procurement and disbursement processes from November 2011 to June 2013. Based on this information, the risk of "bad financial governance and corrupt practices can lead to a reduction in planned funding for each of the expected effects" was evaluated as "virtually nil". Ongoing procedures to minimize fiduciary risk in the context of the current political and institutional situation in Guinea-Bissau will thus be continued in a potential Adaptation Fund project. Annual procurement plans will be utilized to speed up administrative and financial procedures. In addition, the policies and procedures of the West African Development Bank on compliance and to fight frauds and corruptions will be implemented for this project. A clear manual of procedures will be prepared to manage these risks.

The needs and priorities identified during group discussions with the beneficiaries found that many tabancas and/or families still lack basic agricultural equipment (no huller for rice, mills for maize or for millet), are inadequately covered in terms of their water resources needs, without basic health in some villages, very low access to contextualized education, etc. An Adaptation Fund project could effectively reduce these and other problems in Gabú and Bafatá Regions while simultaneously reducing vulnerability to climatic variability and change.

The LDCF project alone could not cover the needs of participating communities. Other projects and programs (see following section D) deal with emergency food provision, biodiversity conservation, or agricultural development, however, not in an integrated and transversal approach such as through the LDCF project. Currently there are no other projects and programs in Guinea-Bissau that cover risk reduction at the level of the LDCF project – scaling up existing activities can thus provide extremely valuable lessons for climate adaptation planning and climate-smart agriculture in the country.

Alternatives to this project proposal were discussed with potential beneficiaries in both Regions: (1) a support project for the production and local distribution of agricultural equipment; and (2) a support project for seed production that are more resistant to climate variability and change (to be developed in partnership with the Institute of Research on the Adaptation of Rice). While relevant in terms of their activities, discussions led to the finding that such activities could be better developed in separate accompanying projects for which funding will be sought. Participants from the LDCF project, as well as the mid-term evaluation of the same project, found that an extension in scale and (more limited) scope of the LDCF project would provide most immediate benefits in an cost-effective manner to a significant population in extremely vulnerable Bafatá and Gabú Regions.

To ensure that the investment costs are used cost-efficiently, regional and/or international tenders will be launched. National Partners who performed satisfactorily under the GEF/UNDP-00077229 project will be allowed to participate in those competitions. The Project Management Unit (PMU) could be authorized to practice a national preference in case domestic companies demonstrate in their proposals the same technical skills and competitive prices equal to those of regional and international companies. Each company interested in submitting a tender will be required to use local workforce and interventions by community-based-organizations (CBOs). With regard to purchases of materials, the PMU will consolidate on markets and launch international calls. The prices to be applied will be those of materials delivered to site, i.e. including transportation costs. Purchases will be made at national level if prices prove competitive. The project also proposes to broaden the choice of providers from CBOs for small activities to ensure competitive costs, durability of interventions, and more effective dissemination of activities and results.

It should be noted that this project follows the country's NAPA's adaptation priority list, which already considers cost-effectiveness as a key concern for the prioritization of measures. The measures are furthermore linked to recent UNFCCC and World Bank concepts such as no-regrets and low-regrets strategies for adaptation. The project is an adepuate response to the priorities needs of Guinea Bissau presented by the National Dertemined Contribution (NDC). The specific project interventions will follow a ranking of costs and benefits, including inputs needed (e.g. labor, materials, finances, time) and positive outcomes (e.g. increased income, increased livelihood security, better flood/drought protection). Underlying needs or demand for the activity, level of familiarity with, and acceptability of activities (including attention to differing responses by gender) and environmental benefits will also be considered.

Alternative analysis

Three alternatives are considered: (i) Alternative 1: Without project; (li) Alternative 2: Development of a classic project without climate change resilient actions; And (iii) Alternative 3: Development of the current project "Scaling up climate-smart agriculture in Guinea Bissau".

Alternative 1: Without project

The alternative without project means not doing the Adaptation Fund project. In this case, farmers will remain vulnerable to climatic changes as long as possible. Agricultural yields will continue to decline. The production will remain low and food insecurity and poverty will gain more ground in connection with population growth.

Indeed, the current situation is marked by early floods and droughts, which limits the efforts of farmers. Agricultural techniques have remained rudimentary; producers cannot deal with these phenomena of climate change.

Without the project, sites will remain exposed to floods, the silting up due to the erosion of the land upstream. The forests will remain prey to bush fires during the dry season, and their ecological and environmental importance will decline. The lack of water to irrigate crops during dry periods will remain and the rate of food insecurity may increase.

Regarding livestock, the alternative without project means that livestock remain exposed to the lack of drinking water and fodder in connection with recurring droughts. Transhumance in search of fodder and water will increase. Loss of livestock and conflicts between farmers and herders during transhumance could increase. Lack of water for livestock watering will continue and water-related diseases may increase.

The alternative without project is environmentally, economically and socially unsustainable. It does not allow the achievement of a sustainable economy because the country will be obliged to put in place in the medium term emergency programs to rescue the populations in these regions. These programs from a financial point of view will cost the country and the donors more than the project under development to have the same results.

Alternative 2: Development of a classic project without resilient actions on climate change

This alternative is to implement a project that does not include resilient actions on climate change. Such a classic project may concern: (i) the development of the sites without infrastructure of mobilization of water, (ii) a simple development of the sites without flood protection actions and the silting up of the sites; (iii) development of the trays with Wells; (iii) the development of the sites without actions of capacity building of producers on adaptation techniques;

This alternative is less costly but will not produce convincing results. In view of the topography and the effects of climatic disruptions, which are manifested in irregular rains, the lowlands where the crops develop are flooded during the rainy season and dry up during the dry season. This phenomenon is coupled with the erosion and transport of sediments that sand the shallows. This limits the development of these lowlands. This alternative therefore does not solve the problems faced by the populations.

Alternative 3: Development of the current project

With the project of the adaptation fund, a series of activities will be implemented in order to deal with the main issues related to the vulnerability of populations to climate change and strengthen the capacities of actors to undertake beyond the adaptation of small and medium scale actions. These activities concern :

- socio-climatic vulnerability assessment for East Guinea-Bissau;
- assessment of technical capacity building needs of ministries and field operatives for adaptation planning;
- formulation of detailed intervention plan for pilot climate-smart agriculture actions and policies, procedures and guidelines related to climate change, gender and natural resources;
- technical trainings on adaptative systems and organizational capacity building for identified target groups;
- technical assistance and rural extension for subprojects;
- formulation/Update of contingency plans for climate-risk management;
- support for famers groups by the government technical experts for adaptation actions implementation;
- capacity building to prevent forest fires;
- Development of lowlands to maintain agricultural production in droughtperiods
- Construction of micro-dams for irrigation of rice, vegetablecrops and livestock water supply
- rehabilitation/improvement of soil productivity and small-scale investments into agriculture inputs (seeds, ferltilizers, pesticides quality), machinery and tools;
- construction of drills/wells and ramps for improved livestock and domestic water supply and market gardens development;

- development of knowledge management strategy;
- creation and operating of the project website;
- development of manual and other materials on best practices and measures for climate-smart agriculture; and
- dissemination of lessons learned to other regions of Guinea-Bissau and West Africa.

These activities will contribute to achieving environmentally, economically and socially sustainable development. At the environmental level, activities to protect the perimeters through reforestation, the establishment of infrastructures for water mobilization and soil conservation will help to preserve the environment, notably forest resources, water resources and maintenance Of the quality of the soils. In economic terms, the project activities allow the creation of jobs, the improvement of farmers' production and incomes, the improvement of women's incomes and their development as well as the improvement of the level Life of target areas. At the social level, the project promotes the reduction of the phenomenon of rural exodus and the strengthening of the family fabric, improving food and nutritional health of populations, poverty reduction and the strengthening of community life.

The following table shows the analysis of the various alternatives:

At the environmental level including the resilience of	 Alternative 1: Without project Flooding of sites Silting of erosion of upstream land. Bush fires during the dry season 	Alternative 2: Development of a classic project without climate change resilient actions - Soil erosion - Flooding of crops during rainy season	 Alternative 3: Development of the current project "Scaling up climate-smart agriculture in Guinea Bissau". Building resilience of people and livestock against the harmful effects of climate change
populations and livestock to the adverse effects of climate change	 Land degradation Reduction of agricultural productivity. Destruction of soil quality Increase vulnerability to the adverse effects of climate change 	 -Silting up of the underworld due to sediment transport Water deficits during the rainy and dry seasons Drying of the gutter during the dry season Degradation and destruction of soils Low agricultural productivity Release of atmospheric co2 from bush fires 	 Protection of the underground flood, silting and drought Sustainable use of the highlands Improving and maintaining the quality of soils Sustainable management of water resources Sustainable management of forest resources Protection of water resources and soils through improvement of the capacity of producers in the management of pesticides and chemical fertilizers
At the economic level	 Increase in expenses related to the acquisition of food Diminishment of labor workforce Pauperization of populations especially women and young people Strong dependence on the external market for food Unsteadiness of Trade Balance 	 Low improvement in the incomes of farmers, including women and young people Increase in expenses related to the acquisition of food Diminishment of labor power Pauperization of populations especially women and young people Strong dependence on the external market for food 	 Improvement of women's incomes and their development Improved income for producers Development of the internal market in food Support for the acquisition of improved seeds Extension of adapted cropping techniques

Table: Alternatives Analysis

		 unsteadiness of Trade Balance Exit of foreign currency 	- Improvement of agricultural yields
At the social level	 Lack of jobs Food Insecurity Nutritional Diseases Rural exodus Transhumance Deterioration of the family ties Lack of drinking water Lack of organization of peasants Conflict between farmers and ranchers in the use of water and space. 	 Low job creation Poor improvement of farmers' living conditions Low Poverty Reduction Food insecurity Persistence of nutritional diseases Persistence of transhumance Persistence of rural exodus Lack of drinking water Persistence of conflicts between farmers and ranchers in the use of water and space 	 Strengthening of the farmers'organization Better involvement of farmers in decision-making Job creation Improvement of the living conditions of peasants, including women and young people Poverty reduction Food Safety Diminishment of nutritional diseases Reduction of transhumance Reduction of rural exodus Availability of drinking water for the population and livestock Reduction of conflicts between farmers and ranchers in the use of water and space
At the financial level	 Exit of foreign currency to finance the purchase of food Funding for emergency food programs. Increase in farmers and state debt 	 Persistence exit of foreign currencies to finance purchase of food Funding for emergency food programs. Increase in farmers and state debt 	 Reduction of foreign exchange exit to finance the purchase of food Reduction of farmers and state debt Availability of financial resources at the farmers' level to refinance agriculture and livestock.

In concrete terms, the Adaptation Fund project, if implemented as planned, enhances the resilience of beneficiaries to climate change risks. The project's activities make a substantial contribution to the production of cereals, particularly rice, which is the fundamental food for households and vegetable food. It will improve access to drinking water for people and livestock and will help to sedentarize herds of livestock and the development of pastures and hay. The production of organic smoke can increase with the sedentarization of animals. This added to the fight against bush fires and the intensification of irrigated agriculture will make sustainable the production of food and improve the nutrition of the populations.

This smart agriculture climate project will be cost-effective. The agriculture component alone allows beneficiaries to achieve a profit of \$USD 5,554,420 per year, taking into account the assistance of the Adaption Funds (AF). Without the project, this benefit is \$ 1,772,114 per year. Thus, the contribution of a climate-smart action for agriculture is 3 782 306 USD per year. This represents about 37% of the Adaptation Fund's investment of USD 9 979 000 (see table below). This table is the summary of the differents operating account of the project (see detail in annex 13).

	Rice	Potato	Tomato	Onion	Total (USD)
Operating results with Project (USD)	2 159 860	1 942 800	752 520	699 240	5 554 420
Operating results without the assistance of the Adaptation Funds (USD)	26 754	1 160 680	292 340	292 340	1 772 114
Gain from project with assistance of the Adaptation Fund (USD)	2 133 106	782 120	460 180	406 900	3 782 306

Table 9: Operating result according different crops

The Crops production gains with Adaptation actions implemented in the framework of the project is 9091140 kg per year (see table below).

Table 10: Crops production

	Rice	Potato	Tomato	Onion	Total
Crops production with the project (Kg)	4 358 400	4 500 000	2 160 000	1 966 500	12 984 900
Crops production without the Adaptation Fund project (kg)	653 760	1 800 000	720 000	720 000	3 893 760
Crops production gains with Adaptation actions implemented in the framework of the project (Kg)	3 704 640	2 700 000	1 440 000	1 246 500	9 091 140

If we consider that the deficit in rice per inhabitant is 54,6 kg (i.e. 38,22 USD per year, as per surveys on food security and vulnerability of rural households) and that the purchasing price of imported rice is 350 FCFA (0,7USD) per kg, then the project contributes to food security through the application of adaptation measures by providing and securing the rice need for 98 961 inhabitants.

To ensure sustainable food security in the country, it is highly recommended to replicate the project in other regions and sectors of the country.

D. Show how the project / program meets the national and local sustainable development strategies, including, if appropriate, national and local development plans, strategies for poverty reduction, national communications, action programs for adaptation to climate change or other instrument, if any

The National Communication to the UNFCCC, the National Adaptation Programme of Action (NAPA), the Nationally Determined Contributions (NDC) and the National Poverty Reduction Strategy Paper (PRSP) are the principal national development/climate change documents linked to this proposal. The country's Second National Communication on Climate Change (SNCCC) reports that both high and low emissions scenarios for climate models downscaled to Guinea-Bissau predict average temperature to increase by about 1.0°C to 2020 under different IPCC scenarios in relation to the average temperatures established for the period 1960–1991. Different to the country's first Fommunication to the UNFCCC, the SNCCC now highlights the role climatic variability for vulnerability, thus calling for the strengthening of current climate risk management strategies and integration of development needs.

The NAPA (Republic of Guinea-Bissau, 2006) has been instrumental in analysing and prioritising the country's key pressing climate change problems and establishing the foundation for this project. Key results related to this proposal are that (i) the economy is largely dependent on agriculture, whose activity relies on rainfall intensity and regularity, and where cashew is the predominant crop, contributing with 62.6% for the GDP in 2004; (ii) that a large part of population depends vitally on the direct exploration of natural resources for its survival, (iii) a lack of infrastructure in East Guinea-Bissau's regions; (iv) that the country faces difficult economic and social conditions, characterised by extreme poverty and a high unemployment rate; (v) very fragile soils, exposed to rain-driven erosion (vi) expansion of agricultural production associated to forest felling and slash-and-burn practices (itinerant agriculture); (vii) bad soil occupancy, due to a lack of agricultural zoning; (viii) an accelerated destruction of forests, estimated at 30,000-60,000 ha/year, with negative effects on current sequestration capacity estimated at 11,288,401 atmospheric CO₂, (ix) a relatively high rate of population growth (2.05% nationwide, and 4% in the capital, Bissau); (x) water-related problems; (xi) outdated and/or ill applied legislation, or even not applied legislation; (xii) weak or non-existent intervention capacity on the part of institutions; (xiii) absence of protection rules and norms against climate risks linked to the construction of infrastructure; and (xiv) the very precarious nature of traditional housing (made of mud and covered with straw).

The NAPA's project priority list is shown in Table 3. This project principally NAPA priority #1, although for a slightly different region, as per explicit recommendations by national stakeholder involved in the consultation process during this project's development. The project also combines and/or integrates elements of priorities #2 (water supply in Gabú and Bafatá), #6 (impact assessment on producers), #7 (small-scale irrigation), #10 (food security) and #13 (short-cycle production of animals) in the project region in East Guinea-Bissau. Note that the project outlines listed below do not address the central aspect of capacity building on climate change, nor the need to mainstream climate change into national policy and awareness raising. The NAPA prioritisation is also gender-blind. For these reasons, the NAPA priorities in Table 3 were used as

a basis for the decisions but not as a blueprint to be used unquestioningly; this takes into account that the knowledge on climate change adaptation and 'windows of opportunity' for action have considerably changed in the years since NAPA publication in 2006. The missing regional focus on Bafatá (5 projects) and particularly Gabú (1 project) 'regions' within NAPA prioritiation would be partially corrected under project implementation.

Order of priorities	Project denomination	Geographical intervention zone
1	Support diversification of production and food	Southern provinces
2	Improvement of water supply in rural zones	Other, Bafatá and Gabú 'regions'
3	Capacity building in prevention and protection of mangrove Bolanhas against high-tide invasion	Southern and northern provinces
4	Observatory for mangrove monitoring and evaluation	Northern and southern provinces
5	Monitoring of coastal area erosion	Northern and southern provinces
6	Assessment of impact of climate change in producers' sectors	Nationwide
7	Promotion of small-scale irrigation in Geba and Corubal rivers	Bafatá and Gabú 'regions', other
8	Prevention of natural catastophes	Nationwide
9	Protection, conservation and enhancement of fishing and coastal resources	Coastal areas
10	Integrated system of information on food security (SISA)	Nationwide
11	Environmental education and communication in coastal areas	Coastal areas
12	Rehabilitation of small perimeters of mangrove soils for rice growing in Tombali, Quinara, Bafatá and Oio	Bafatá 'region', other
13	Support to production of short-cycle animals	Bafatá 'region', other
14	Reforesting of degraded areas	Bafatá 'region'
Total		-

Table 3: NAPA priorities in Guinea-Bissau

Source: Republic of Guinea-Bissau (2006).

In Its quality of Non Annex I Party of the United Nations Framework Convention on Climate Change (UNFCCC), also as a Least Development Country (LDC) and Small Independent Developing State (SIDS), Guinea-Bissau has developed its Nationally Determined Contributions (NDC). This NDC is a reference document for actions in the field of climate resilience in the country. It is inspired on the second generation of the National Poverty Reduction Strategy (PRSP II) aligned with the National Strategic Plan – TERRA RANKA 2015-2025. All these have mainstreamed the priorities of the National Action Plan for Climate Change Adaptation (NAPA, 2006).

The NDC identified the following needs:

- Capacity strengthening has a direct effect on improving decision-making and planning for comprehensive risk management for both public and private actors regarding events associated with climate variability and change in the sectors of forest, water and energy, agriculture and livestock, health, fishing and civil protection.

- Promoting research for development, regional and international exchanges to improve applicability of knowledge acquired by Guineans.

The 2006 National Poverty Reduction Strategy Paper (PRSP) highlights government instability, mismanagement of public funds, and structural constraints in the economy as key issues, including little diversification of income sources, low internal resource availability, weak human capital and lack of private sector dynamism. The PRSP's strategy focuses on a broad spectrum of issues to address these endemic problems, including instigating good governance, battling corruption, improving human rights, building institutional capacity and human resources, and increasing agricultural and fishing productivity alongside improving environmental protection. In addition, the PRSP points to an increasing involvement of well-informed NGOs and participation of a strong civil society, which can be mobilised to improve social and economic conditions. The present project is therefore in line with the key PRSP recommendations.

How project activities fit with wider local or regional development plans and regional change (government, local NGOs, community and autonomous initiatives such as local small businesses) is a key concern for this project. In this context, the project follows key recommendations of Guinea-Bissau's NAPA, 2nd Communication to UNFCCC (Republic of Guinea-Bissau, 2006; SEAT/DGA and Republic of Guinea-Bissau, 2011), and NDC 2015 as well as those of relevant national strategies and plans along the lines of good agricultural management, improved water management and poverty reduction. For example, the Poverty Reduction Strategy for Guinea-Bissau (PRSP) integrates the agricultural sector's strategies into account in its fight against poverty, while the Charter for Agricultural Development aims to (i) guarantee food security, (ii) increase and diversity agricultural export. (iii) ensure rational management and preservation of agro-sylvo-pastoral resources, and (iv) to improve living standards of rural populations. This includes the dissemination of practices such as promotion of low-cost irrigation systems, production diversification, construction of micro water retention and small dykes for water retention, extension of short-cycle seeds, use of adapted varieties less demanding in water and resistant to prolonged drought periods, etc. The project also contributes to the Gabú and Bafatá sector regional development plans, which focus on livestock and agriculture development. In particular, the integration of climate change adaptation may provide key input to those plans which currently only consider actual climatic variability.

Table 11 gives overview on important plans and strategy papers in Guinea-Bissau and important issues in relation with this project proposal.

Scale	Name	Key objectives	Important issues in relation with the project proposal
National	Second Poverty Reduction Strategy Paper	 Short-cycle seeds Dissemination of varieties less demanding in water and 	Agricultural development for poverty reduction and increasing food security
National	National Agriculture Investment Plan (NAIP)	 resistant to prolonged drought periods Increase in hydraulic works, 	Livestock development and increasing animal feed quality
National	Letter of Agrarian Development (including Letter of Livestock Development, 2011)	 including construction of micro water retention and small dykes for water retention Promotion of low-cost irrigation systems 	 Water resources management Lack of climate change adaptation integration

Table 11: Guinea-Bissau plans and strategies related to this project proposal

		 Production diversification Improvement of grazing fields through introduction of plants with high nutritional quality and greater production potential, especially leguminous species Promotion and strengthening of production of short-cycle animals (goats and sheep) 	Setting up of an Early Warning System against climatic risks
National	National Strategy for Protected Areas and Biodiversity Conservation (2014- 2020)	 Protect biodiversity and reduce pressures for soil erosion and other land degradation Control sustainable use of 	 Activities promote sustainable use of natural resources in agriculture and livestock Project pilots aim to avoid
National	National Action Program on Fight against Desertification (under discussion)	 natural resources in protected areas (PA) Reduce slash-and-burn agriculture More generally: promote sustainable use of biodiversity in affected areas 	 exceeding carrying capacities of local ecosystems through adoption of sustainable practices Reduce pressures for desertification and deforestation
National	National Environmental Management Plan (PNGA)	 Identifies key environmental deficits that call for the implementation of new nation- wide programs, including in the areas of (1) combat against land degradation; (2) a water supply and management program; (11) and climate and prevention of disaster risk 	• Proposed project supports the strengthening of transversal activities in the areas of climate-smart agriculture, and thus can contribute to the development of the PNGA
Regional	Gabú and Bafatá Regional Development Plans	Development of agricultural activities and livestock creation	 Framework for implementing small-scale interventions on agricultural development, livestock and water resources management Highlights importance of climatic conditions for production
National, Gabú	Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea- Bissau	 Integration of climate change adaptation into development planning Small and medium scale climate change adaptation practices for water, agriculture and livestock management Capacity development on climate-resilient agriculture at local, regional and national scale 	Built the framework for promoting adaptive capacity and increase the agriculture and water sector's resilience to climate change, linking rural development and water resources management with climate adaptation

National	Forest Master Plan and Forest Law	 Setting-up of conservation units, especially in fragile ecosystems Promotion of local conservation and development initiatives Reforestation using endemic species 	 Sets national framework for biodiversity conservation and sustainable use of natural resources Conservation agriculture and agroforestry Lack of climate change adaptation integration
Regional	Support for the Consolidation of a Protected Area System in Guinea- Bissau's Forest Belt	 Consolidation of protected areas (PAs) in the Forest Belt Initial assessment of climate change risk on Guinea- Bissau's biodiversity 	 Identified key risks for agriculture and water resources in project region Highlights importance of reducing pressures from slash-and-burn agriculture
National National	National Water Code Water Master Scheme	 Rehabilitation, renewal and extension of water infrastructure Improving knowledge on water resources and sustainable use thereof (training) Integrated management of water resources (IWRM) Preparation of legislation on slash-and-burn agriculture 	 Sets framework for integrated approaches towards water resources management Puts slash-and-burn agriculture in the spotlight of policy discussions
National	National Health Development Program II and other	 Reducing child mortality Research programs on climate and health 	 Importance of food security for health Improve understanding on climate-sensitive diseases

The activities proposed to be implemented under this project respond to the needs identified by the NDC. The interrelationships between the needs of the NDC and the activities of the project are presented in the following table :

Table 12: Interlation between Guinea Bissau needs identified by NDC and project activities

Needs identified by the NDC	Project activities that meet the needs identified by the NDC
Capacity strengthening has a	The project proposed, among other things, the following
direct effect on improving	activities to meet the needs of the NDC:
decision-making and	- Output 1.1.1. Socio-climatic vulnerability assessment for
planning for comprehensive	East Guinea-Bissau
risk management for both	- Output 1.1.2 Technical capacity needs assessment for
public and private actors	
regarding events associated	- Output 1.1.3 Formulation of detailed intervention plan for
with climate variability and	pilot climate-smart agriculture actions and policies,
change in the sectors of	procedures and guidelines related to climate change,
forest, water and energy,	gender and natural resources
agriculture and livestock,	- Output 1.2.1 Technical trainings on adaptative systems
health, fishing and civil	organizational capacity building for identified target groups
protection.	

	 Output 1.2.4 Support for famers groups by the government technical experts for adaptation actions implementation Output 1.2.5 Capacity building to prevent forest fires Output 3.1.3 Manual and other materials on best practices and measures for climate-smart agriculture are developed.
	All these activities will strengthen the capacity of the actors and that of the country in different sectors.
Promoting research for development, regional and international exchanges to improve and improve applicability of knowledge acquired by participants.	 Output 2.1.3 Rehabilitation/improvement of soil and pasture productivity and small-scale investments into agriculture inputs, machinery and tools. This activity includes the introduction of improved seeds with the collaboration of the National Institute for Agronomic Research (INPA), Output 3.1.1 Knowledge management strategy developed Output 3.1.4 Dissemination of results to other regions of Guinea-Bissau and West Africa Out 3.2.1 Dissemination of results to UNFCCC process and other relevant international negotiations

It is important to note that the present project proposal has synergies and complementarities with other relevant recent or on-going programs in agriculture and water management in the planned target regions of Gabú and Bafatá, not limited to adaptation to climate change. These synergies and complementarities occur in the following domains: (i) improvement of technical and institutional capacity of stakeholders; (ii) increase of agricultural productivity and food security; (iii) construction of water infrastructure; (iv) management of natural resources; and (v) diversification of crop production.

In the domain of (i) improvement of technical and institutional capacity of stakeholders, the proposal project enter in complementarity with:

- Rural and Agricultural Sector Rehabilitation Project (PRESAR) supported by the African Development Bank. PRESAR's three objectives include the strengthening of rural organizations' capacity to support small-scale farmers and infrastructure in sevaral Regions of Guinea-Bissau, including Bafatá and Gabú;
- The Intensification and Valorization of Local Agricultural Products project (DIVA) from 2008-2011 (US\$ 1.500.000). Carried out with support by the Italian Government in both Bafatá and Oio regions, the project helped in the capacity building of producers and their institutions;
- UNJP/GBS/301/PBF Gender Promotion Initiative (until 2015) with a US\$ 146,796 budget aimed to improve economic security and women's rights including in rural areas, investing in initiatives that ensure their economic and social empowerment through small-scale business activities; promotion and protection of women's rights and strengthening of organizational capacity of coordinating institutions;
- The Local Governance and Income Generating Activities support project was financed by the Dutch government from 2010-2013 with US\$200,000. The project aimed to improve governance by local communities and them in developing income-generating businesses and activities that would contribute for the improvement of their living conditions. Measures

included micro-credit for agricultural and livestock production, provision of agricultural training, and technical assistance to prepare community plans.

 UNDP/GEF National Capacity Self-Assessment (2009-2011) made important progress in assessing the national capacity to implement the Rio Convention and developing a Strategy and Action Plan for Capacity Building on Environment Management, points that have directly contributed to the LDCF project development.

In the domain of (ii) increase of agricultural productivity and food security the proposal project has synergies and complementaries with the following projects:

- Several initiatives coordinated by the UN's Food and Agriculture Organization (FAO), including the International Fund for Agricultural Development (IFAD). FAO is implementing a number of projects, programs and initiatives that support Guinea-Bissau in the implementation of the Charter for Agricultural Development Policy, its action plan and what is part of the National Program of Food Security. FAO has projects in the whole country and also in the two project regions. It is worth mentioning two particular interventions: (1) The Food Security Project, which targets a number of policy, structural and on-ground interventions to address the now recurring issue food security in Guinea-Bissau; (2) Project for diversification and intensification of agriculture and valorization of agricultural production;
- GCP/RAF/461/SPA Strengthening Capacity of ECOWAS for Effective Comprehensive Africa Agriculture Development Program (CAADP). Implementation in West Africa (until 2015) aimed to improve the food security and nutrition situation in West African States and concrete progress of ECOWAS Member States towards achieving the UNMDG1, measured by increased and sustained agricultural growth in line with the six percent CAADP annual agricultural growth target (US\$4 million);
- TCP/SFW/3402 Support to Policy Initiatives for the Development of Livestock/Meat and Dairy Value Chains in West Africa (end 2014). The project with a US\$ 500.000 budget aimed to subsidize the creation of a suitable environment for the development of value chains for livestock and livestock products to achieve food security, poverty reduction and reduction of dependency on food imports. A successful implementation of the project would contribute also to integration of livestock producers into markets, job creation, improvement of living standards and sustainable increase of livestock production and productivities. The envisaged impacts of the project were in line with the objectives of ECOWAP. The project impact is also in line with the objectives of MDG, FAO's Strategic objective B and the Priority Area 1 of FAO Africa;
- WB/EU Emergency Project for Food Production (2009-2012) with an approximate budget of \$9 million, and other recent/ongoing emergency programs. The mentioned project seeked to assist the recovery of 5,000 hectares of mangrove soils and lowland continental soils for rice growing and vegetable production. The aim was to increase rice production and reinforce food security at community level;
- UNDP's Community-Based-Organizations' Support Project in Gabú Region (OCB) (2008-2012). This project was financed from UNDP core funds for \$1.5 million and its implementation extended from 2008-2012. The project was active in the Gabú region and wanted to support several local community-based-organizations' members to develop agrarian production (crops and livestock) for their self-sufficiency, thus improving their food security;
- Project for agricultural production in urban and peri-urban areas which includes the (i) development of operational plans for the improvement in short-cycle animal husbandry in the wildlands (including Gabú and Bafatá regions), (ii) implementation of micro-projects

for breeding, processing and marketing of animal products, and (iii) development of partnerships with private sector and support services (until 2016);

• Several other programs (e.g. by the Ministry of Agriculture) aim to retrieve former production values for cashew nuts and rice, with a particular focus on women's integration in the production chain. Further initiatives focused on community development and rural rehabilitation in Guinea-Bissau.

Regarding to the domain (iii) construction of water infrastructures, the proposal project has stong links to the following programs and projects:

- The Rural and Agricultural Sector Rehabilitation Project (PRESAR) which is implemented by the Ministry for Agriculture and Rural Development of Guinea-Bissau (MADR) with support from the African Development Bank. PRESAR three objectives include the reorganization and rehabilitation of water and agrarian structures.
- The proposal project also enters in synergy with the Program of Work of the General Directorate for Water Resources (DNGHR). Within the framework of the Sub-Regional Programto Fight against Poverty, the Government of Guinea-Bissau has been receiving significant finance for water resource management, as a member of UEMOA (the West African Monetary Union) and from OMVG (the Basin Organization for the Management of the Gambia River). One of wwo interventions are particularly relevant to mention: (i) UEMOA's Rural Hydraulics Program in Guinea-Bissau, under which a total 300 water points are foreseen to be built, 50 of which are in the Gabú Region, plus a community capacity strengthening program on self-sustained was point management, including sensitization and training in hygiene and basic sewerage; (ii) Integrated water resource management for the hydrographical basins of river Kayanga-Geba, financed through a grant, within the framework of African Water Facility, under which it is foreseen that an Integrated Water Management Plan for the Kayanga-Geba basin will be prepared, as well as the financing of studies for the exploration of basin's irrigation potential with respect to the part of the various river that flows into Guinea-Bissau. The Kayanga-Geba basin is located in the same sites selected for this project application (project running until 2017).

With regards to biodiversity conservation, as fragmentation and pressures on natural resources increase throughout West Africa, areas such as Guinea-Bissau's Forest Belt have become important refuges for threatened species, providing also important national and transnational biological corridors and migration routes for large mammals in the region. In this domain of (iv) management of natural resources principal complementarities are with these projects and programs:

The UNDP/GEF Project SPWA - Support for the Consolidation of a Protected Area System in Guinea-Bissau's Forest Belt project which supported the consolidation of protected areas (PAs) in the Forest Belt through establishment on an interlinked protected area system containing of two inland PAs (Boé National Park, Dulombi National Park) and three biological corridors (Tchetche, Cuntabane-Quebo, and Salifo), located at the junction of Gabú, Bafatá and Tombali 'Regions' in central south Guinea-Bissau. Furthermore, the project supported preliminary assessments on primary threats to biodiversity, including its root causes; undertook a detailed stakeholder analysis for PA implementation; and carried out an initial assessment of climate change risk on Guinea-Bissau's biodiversity. This latter study highlighted potentially disastrous impacts on land, water, and forest resources, with strong relevance for rural livelihoods across the entire Forest Belt region. This projects build on the findings of the GEF/UNDP-3650 project in that it (i) targets key root causes identified (persistent rural poverty, weak institutional capacity and lack of coordination among authorities) through small-scale productive interventions and mainstreaming of adaptation into development planning; and (ii) reduces potential environmental pressures on the Forest Belt via conservation agriculture and agroforestry (including positive impacts via reduced slash-and-burn agriculture). In cases where project beneficiaries are located near or around the Forest Belt, rural extension and capacity building components will be used to incentivize beneficiaries to prevent deforestation and overuse of natural resources. Potential subprojects near the project belt will shortlisted as soon as the project starts in order to allow for timely implementation of these actions.

- UNDP/GEF Sustainable Land Management Project SLM. With a total budget of less than \$0.5 million, the long term aim of the project is to contribute to the recovery of degraded land through institutional and individual capacity building. It is doing so by integrating sustainable land management issues into national development strategies, completing the National Action Plan to Combat Desertification (PAN/LCD), reinforcing, harmonizing and integrating the institutional, technical, organizational and legal capacities in the policy for SLM.
- The Rural and Agricultural Sector Rehabilitation Project (PRESAR) which is support by the African Development Bank. One of tree objective of PRESAR focuses on capacity building in integrated natural resource management and land management at the level of villages.

Regarding (v) diversification of crop production this proposal enters in complementarity with:

- The School Horticultural Activities Support Project which is develoed in collaboration with World Food Program (WFP). This project targets, among other, 50 schools in the Gabú region and aims to diversify and intensify of agriculture as well as valorization of agricultural production.
- The Intensification and Valorization of Local Agricultural Products project (DIVA) from 2008-2011 (US\$ 1.500.000) which also focuses on the intensification and diversification of agricultural production in Guinea-Bissau.

Regarding (vi) livestok production, this project enters in complementarity with :

 A Green Climate Fund (GCF) and BOAD project identified and which is in the process of formulation: Strengthening livestock resilience to drought in Guinea-Bissau (US \$ 10,000). The project aims to increase the resilience of livestock production to the adverse effects of climate change in north-eastern and north-western of Guinea Bissau.

Table 13 below summarizes the key overlaps and potentials for synergies between the present project proposal and other relevant initiatives in agriculture and water management in Guinea-Bissau, and puts these overlaps in context with the expected outcomes of this proposal. What becomes clear is that climate resilience and adaptation are yet little integrated in development projects in the country, highlighting the importance of this present proposal.

Table 13: complementarities and synergies of the proposed project and with other initiatives in Guinea-Bissau

	Possible com	nlomontaritios	and synoraio	s with the activit	tios of similar n	rojects and	
	Possible complementarities and synergies with the activities of similar projects and programs implemented in Guinea Bissau:						
	(i) UNDP/GEF National Capacity Self-Assessment; (ii) UNDP/GEF Sustainable						
				t against povert		mance and	
				s Promotion Sup			
				motion Initiative,			
				in Gabú Region blidation of a Pro			
				WB/EU Emerg			
				2 Support to po			
				airy value chair			
Expected outcomes				Capacity of EC			
of this project				pment Program			
				Sector Rehabili			
				ification of agricu orticultural activ			
				am of Work of t			
				BOAD project :			
				ht in Guinea-Bis			
	Improvement	Increase in	Constructi	Management	Diversificati	Livestok	
	of technical	productivity	on of	of natural	on of crop	resilience	
	and	and food	water	resources	production		
	institutional	security	infrastruct				
	capacity of stakeholders		ure				
Increased technical							
capacity of government							
and field workers to							
assess impacts,	X						
vulnerability and							
adaptation needs in extremely vulnerable							
regions							
Family farmers,							
development							
professionals, and							
government experts have			Х	X		X	
integrated knowledge on							
climate-smart agriculture, in practice (on-site) and							
adaptation planning							
Agricultural and livestock							
activities are climate-							
smart and contribute to		X	X		X	X	
sustainable increases in							
productivity and enhance							
national food security							

Sustainable climate-smart agriculture practices and management is adopted in comparable regions of the country and West Africa, and disseminated to other West African countries, contributing to resilience and development needs in those regions			
International negotiations on climate change adaptation recognize and integrate new knowledge on climate-smart agriculture in LDCs in their policies and practices			

Otherwise the project's objectives have strong linkages to the Second National Health Development Plan of Guinea-Bissau, as well as the Millennium Development Goals (MDG) to eradicate extreme poverty and hunger, reduce child mortality, and ensure environmental sustainability. Finally, the project is also in concordance with the 'regional' development plans of Gabú and Bafatá and related documents which highlight the importance of livestock and agriculture in their economy and call for further actions to strengthen these sectors against climatic extremes such as droughts or floods. Water management is also discussed extensively in both 'regional' plans.

E. Describe how the project / program meets relevant national technical standards, where appropriate, such as environmental assessment standards, building codes, etc., and complies with environmental and social policy of the Adaptation Fund

The project will comply with all relevant standards in the areas of agriculture, water resources, small scale water retention, and natural resources management, and small infrastructure, as well as environmental and social standards.

The project is in compliance with the national environment and social regulations, the E&S principles of the Adaptation Funds and with the Environmental and Social Safeguards of West African Development Bank (BOAD), which are aligned with GEF's and World Bank's Environmental and Social safeguards.

The current proposal complies with relevant standards in Guinea Bissau such as:

- The Land Law (5/98, 1998);
- Water Code (5a-92, 1992);
- The Law on Environmental Impact Assessment (EIA) (10/2010);
- The Framework Law on Protected Areas (3/97, 1997);
- The Basic Law of the Environment (1/2011) and the Forestry Law (5/2011);

- Second Poverty Reduction Strategy Paper;
- National Agriculture Investment Plan (NAIP;)
- Letter of Agrarian Development (including Letter of Livestock Development of 2011);
- National Strategy for Protected Areas and Biodiversity Conservation (2014-2020);
- National Action Program on Fight against Desertification (under discussion);
- Forest Master Plan and Forest Law;
- Water Master Scheme;
- National Health Development Program II.

One important problem that continues is that local customs and law are often distant from existing legislation. A second important problem is a lack of legislation, as in environment and in the water sector, that defines the property of hydraulic structures, rights and obligations of users and state and especially governs the principle of recovery of utility costs (tax on water and wastewater) (Guinea-Bissau, 1998). The Direcção Geral de Florestas e Fauna (DGFF) is responsible for application of the Water Code (5a-92, 1992) and technical norms on execution of other hydraulic works, and also applies taxes and fees exist for selling of forest products, felling of trees, illegal chase, prevention of slash-and-burn agriculture etc. But low enforcement of existing legislation strongly affects adherence and compliance to standards in the sector of agriculture, water and natural resources management, and small infrastructure.

Guinea Bissau is a state member of the BOAD. Since 2013, BOAD has strengthened its environmental and social safeguards to comply with the requirements of GEF. The list of operational policies and guidelines and applicable procedures in this area of this project proposal is attached. Moreover, based on the Environmental and Social Management Framework (ESMF) carried out for the full proposal, national policies and regulations will be enhanced or drafted, disclosed and implemented at national and local level to fill gaps caused by deficiencies of standards in the sectors of agriculture, water, natural resources management, small infrastructure, environmental and social management.

In response to conflicts between local customs and law, the proposed project will develop a strategy with relevant institutional partners and RCCF to ensure that relevant standards are understood by project beneficiaries and applied at project level (Eg prevention of illegal burning or hunting) by the village authorities and the beneficiaries themselves. This strategy will be based on presentations to village councils, women's associations, development of small textbooks, etc. Conflicts between local customs and the relevant right to this project request will be identified by the relevant local and regional authorities and government agencies (water resources, forestry, other) and RCCF. On the other hand, the project will help to improve or draft, validate and approve national guidelines on water retention / dam safety, involuntary resettlement, land use, management Forestry, pest management, indigenous peoples, natural habitat, physical cultural resources, public participation in the process of environmental impact assessment and gender mainstreaming. The project will also help to develop/improve principles of the Adaptations Funds as: Equity and access, Gender Equity and Women's Empowerment, Marginalized and Vulnerable Groups.

Six (6) partnership protocols which were signed by the LDCF project team with relevant institutional partners in the areas of water resources management, small infrastructure, environmental and livestock and agriculture will support this process. These partnership protocols include:

1. The Directorate General Agriculture, particularly for training activities and dissemination of improved agricultural techniques, and studies of irrigation schemes shallows;

- 2. The Directorate General of Livestock, especially for training on hygiene, health and animal feed and livestock vaccination campaigns;
- 3. The General Directorate of Water Resources (DGRH), including water resources management activities and construction of boreholes and wells in villages;
- 4. The National Institute of Meteorology (INM) as part of the rehabilitation and equipment of the meteorological station Bafatá, construction and equipment of the meteorological station of Gabu, the establishment of 4 stations Pirada assistants, Buruntuma, Canquelifa Chih-Chih and the establishment of a rainfall station in each of the 14 villages targeted by the project, and the strengthening of INM staff capacity;
- 5. The National Institute for Agronomic Research (INPA), for improved seed development activities of rice production and the provision of improved seeds; and

It is planned to expand upon existing partnerships and develop further partnerships (e.g. DGFF) in the AF proposed project.

For planning and construction in the water, agriculture and livestock existing benchmarks will be utilized for dimensioning infrastructure works (e.g. wells, small-scale water retention, and smallscale dams). Annual average gross needs for irrigated crops in the dry season are roughly evaluated at 7.000-8.500 m3/ha, and at 3.500-7.000 m3/ha for rice during its phenological cycle Unit water requirements for animals on average are estimated at 25 l/day/head for cattle, 5 I/day/head for sheep, 7 I/day/head for goat, 5 I/day/head for pigs, 0.2 I/day/head for chicken (DGRN, 1998). Concerning village water management existing standards on construction of new water points will be followed. This includes the necessity of hydrological and feasibility studies (socio-economic, demand, capacity, existence of public interest), administrative authorization processes, the constitution of village water management committee, information to the public, health education and periodic monitoring, with inclusion of stakeholders. Specifically water points will need to be constructed within a 500 m diameter from the village, but not in the village in order to avoid pollution risks. Furthermore it is ruled that the community retains ownership of the land around the water point and that any activities or constructions within a radius of 25 m around the waterhole which could threaten water quality (latrines, water troughs or washing and laundry) are be prohibited.

The Adaptation Fund's principles and the National standards required by the Government of Guinea Bissau, including environmental impact studies, laws and regulations related to water, land management as well as guidelines for the agriculture and irrigation codes have been taken into account.

Table 14: National texts applicable to the project and correlation with AF's principles.

A Francisco de La co	Corresponding national standards				
AF principles	National text enacting the standard	Standard			
Compliance with law	Law No. 1/2011 of 2 march 2011 constituting framework law on environmental	Article 2: This law has the objective of defining the legal basis for the use and proper management of the environment and its components, for the materialization of a sustainable development policy of the country			
	The Environmental Assessment Act approved by the Government, at the session of the Council of Ministers of 19/03/08	This law is a fundamental preventive instrument of environmental policy. It enshrines the promotion of sustainable development, balanced management of natural resources, while ensuring the protection of the quality of the environment, contributing to the improvement of the quality of life of the man.			
Equity and access	Constitution of the republic of Guinea- Bissau, adopted in 1984 and amended in 1991, 1993, 1996	Article 24: All persons are equal before the law, enjoy the same rights and are subjected to the same duties, without distinction as to race, social status, intellectual or cultural level, religious belief or philosophical conviction. Article 32: All citizens have the right of access to judicial organs to seek redress for violations of their constitutionally recognized rights and the law. Justice cannot be denied on economic grounds.			
	Law No. 1/2011 of 2 march 2011 constituting framework law on environmental	Stipulates in its article 4 Alina 1: Everyone has the right to a human and eco-environment equilibrate the duty to defend, leaving it to the State, through the own body and appeal to popular and community initiatives, promote the improvement of the quality of individual and collective life.			
Human Rights	Constitution of the republic of Guinea- Bissau, adopted in 1984 and amended in 1991, 1993, 1996	Article 24: All persons are equal before the law, enjoy the same rights and are subjected to the same duties, without distinction as to race, social status, intellectual or cultural level, religious belief or philosophical conviction. Article 32: All citizens have the right of access to judicial organs to seek redress for violations of their constitutionally recognized rights and the law. Justice cannot be denied on economic grounds.			
Gender Equity and Women's Empowerment					
Marginalized and Vulnerable Groups	Constitution of the republic of Guinea- Bissau, adopted in 1984 and amended in 1991, 1993, 1996	Article 24: All persons are equal before the law, enjoy the same rights and are subjected to the same duties, without distinction as to race, social status, intellectual or cultural level, religious belief or philosophical conviction. Article 32: All citizens have the right of access to judicial organs to seek redress for violations of their constitutionally recognized rights and the law. Justice cannot be denied on economic grounds.			
Core Labour Rights	Constitution of the republic of Guinea- Bissau, adopted in 1984 and amended in 1991, 1993, 1996	 This law stipulates in article 46 : (1) Workers have a right to protection, security and hygiene at work. (2) The worker can only be dismissed in accordance with the law: dismissal for political or ideological motives is prohibited. 			

Amended in November 2013

	Corresponding national standards					
AF principles	National text enacting the standard	Standard				
		(3) The state will gradually establish a system capable of guaranteeing workers social security pensions, in sickness or when incapacitated.				
Protection of Natural Habitats	Law No. 1/2011 of 2 march 2011 constituting framework law on environment	This law stipulates in article 78, that "In order to ensure the protection of appropriate quality of natural environmental components, the State through the body responsible for the area of the environment, may interdict or condition the exercise of activities and actions necessary to develop in pursuit of the same purposes, in particular through the adoption of containment and surveillance measures that take into account, besides the economic, social and cultural costs of environmental degradation in terms of obligatory prior cost-benefit analysis".				
Conservation of	Law No. 1/2011 of 2 march 2011	The law provides in Articles 11 and 12 on the preservation of flora and fauna.				
Biological Diversity	constituting framework law on environment	Article 11: (1) Measures will be taken for the promotion and protection and enhancement of plants and green spaces. (2) Some plant species threatened with extinction may be subject to special protection. (3) The legal framework for the management and operation of flora will be subject to special legislation.				
		Article 12: (1) All animals will be protected through legislation that promote and safeguard the conservation of the species about which affect economic or social scientific interests; (2) The protection of wildlife and the need to protect public health imply the adoption of effective control measures to be carried out by competent bodies and health authorities, particularly in the context of:				
		a) Maintenance or activation of the biological process of self-regeneration;				
		b) Commercialization of terrestrial fauna, aquatic area;				
		c) Introduction of any species of animal sel-pod, terrestrial aquatic;				
		 d) Destruction of animals considered harmful by, without exception, by duly authorised methods and always under supervision of the competent authorities; 				
		e) Regulation and supervision of the importation of exotic species;				
		f) The regulation of some species more endangered animal may be subject to special protection.				
	Orders No. 045 / PRG / 87: Code protection and enhancement of the environment	Art.48 The fauna and flora must be protected and regenerated using sound management in order to preserve the species and genetic heritage and to ensure the ecological balance. Art.49 is prohibited or subject to prior authorization of the Directors in accordance with laws and regulations, any activity that may harm the animal and plant species or their natural habitats.				
	he Forestry Law approved through Legislative Decree No. 4-A / 91,	This legal instrument aims to promote the sound management of natural resources in order to maximize the contribution of these resources to the economic, social, cultural and scientific country, in agreement with the national, regional and local.				
	The Law on Wildlife, approved by Legislative Decree No. 2/2004	Regulate the activities in the field of wildlife and provides for adequate measures in the direction of curbing harmful practices.				

		Amended in November 2013		
AF principles	Corresponding national standards			
	National text enacting the standard	Standard		
Pollution Prevention and Resource Efficiency	Law No. 1/2011 of 2 march 2011 constituting framework law on environmental	This law stipulates that: Article 9: Everyone is entitled to an air quality appropriate to their health and well-being, both in public spaces for recreation, leisure and circulation, whether in housing, the workplace and other human activities.		
		Article 10: The public services responsible for authorizing and supervising construction on waters, shall ensure that before its entry into operation and during operation are fulfilled the standards relating to the protection of waters. The release of effluents polluting waters, solid waste, any products or species that alter its characteristics or the become unfit for its various uses, will be the subject of special legislation.		
		Article 19: Are factors of environmental pollution and degradation of the territory all actions and activities that adversely affect the health, well-being, and the different ways of life, the balance and the sustainability of natural and processed, as well as the physical and biological stability.		
		Section III of the Act is devoted to pollution / contamination and prohibitions. Article 20 deals with the sound pollution, Article 21 and 22 of the waste: sewage and chemical waste; Article 23 radioactive substances and Article 24 of food products.		
	Ordinance No. 045 / PRG / 87: Code of protection and enhancement of the environment	Article 60. Waste must be properly treated to eliminate or reduce their adverse effects on human health, natural resources, flora and fauna or the quality of the environment general. Article 61 When the waste is abandoned, filed or processed in contravention of the provisions of this Code and the regulations in force, the authority concerned shall automatically make the disposal of such waste at the expense of those responsible. Article 79 The imposition of noise emissions that could harm the health of man, of undue nuisance to neighbors or harm the environment. The people behind these programs must implement all appropriate measures to remove them. When the urgency justifies it, the ministerial authority of the environment can take enforceable measures automatically to cease the disorder. Article 80 It is prohibited by the facilities, odor-which, by their concentration or their nature, prove to be particularly unpleasant for humans.		
Public Health	Constitution of the republic of Guinea- Bissau, adopted in 1984 and amended in 1991, 1993, 1996	Article 15: Public Health aims to promote physical and mental well-being of the population and balanced integration in the social and ecological environment in which it lives. It must focus on prevention and aim at the progressive socialization of medicine and medical and pharmaceutical sectors.		

	Amended in November 2013		
AF principles	Corresponding national standards		
AF principles	National text enacting the standard	Standard	
	Ordinance No. 045 / PRG / 87: Code protection and enhancement of the environment	 Article 75 The noxious and hazardous substances, because of their toxicity, radioactivity or concentration in biological chains, present or may present a danger to humans, the environment and the environment when 'they are produced, imported Guinean territory or discharged into the environment, are subject to supervision and monitoring of the service environment. Article 76 A decree sets this code: obligation of manufacturers and importers of chemicals for marketing regarding disclosures in environmental service related to the composition of preparations placed on the market, sold their volume and their potential effects with respect to the man and his environment; the list of noxious and dangerous substances the production, importation, transit and traffic on Guinean territory are prohibited or subject to prior authorization of the environmental service; the conditions, mode and the transport route, as well as all requirements relating to packaging and marketing of substances referred to in the previous paragraph; the conditions of issue of the prior authorization referred to in paragraph 2. 	
		- The conditions of issue of the phor authorization referred to in paragraph 2. Article 77 The chemicals, harmful or dangerous, manufactured, imported or sold in violation of the provisions of this Code and its implementing regulations can be seized by officers authorized for Fraud; Sworn agents of environmental service and those of the ministries of rural development and health. When danger justifies, these substances can be destroyed, neutralized or stored as soon as possible by the care for the environment at the expense of the offender. Article 78 It is prohibited to import, manufacture, possession, sale and distribution even for free of chemical fertilizers, agricultural pesticides and pesticides that have not been subject to approval of the Ministry of Rural Development established after consultation with the service of the environment, in accordance with Article 18	
Lands and Soil Conservation	Law No. 1/2011 of 2 march 2011 constituting framework law on environmental	Artcile 14 : The defense and enhancement of soil as natural resource determines the adoption of measures leading to its rational use. The occupation and use of the urban purposes and industrial ground or deployment of equipment and infrastructure will be conditioned by their nature, topography and natural features of his dependents.	
	Ordinance No. 045 / PRG / 87: Code protection and enhancement of the environment	Art.15 The soil, subsoil and the treasures they contain are protected as a renewable resource limited or not, against all forms of degradation and managed rationally.	
		Art.16 The use of agricultural or pastoral use bushfires is subject to prior authorization from the competent local authority, which may either prohibit them or fix all the provisions prescribed by law.	
Physical and Cultural Heritage	Constitution of the republic of Guinea- Bissau, adopted in 1984 and amended in 1991, 1993, 1996	 Article 15 of the constitution stipulates that: 1) The state protects and promotes the cultural heritage of the people, whose valuation must serve progress and safeguard human dignity. 	

Amended in November 2013

	Corresponding national standards		
AF principles	National text enacting the standard	Standard	
		2) Conditions will be created so that all citizens have access to culture and are encouraged to actively participate in the creation and dissemination of that culture.	
	Law No. 1/2011 of 2 march 2011 constituting framework law on environmental	Article 31 is dedicated to Protected areas, reserves, sites, ensembles and Classified Objects.	
	Ordinance No. 045 / PRG / 87: Code protection and enhancement of the environment	Article 4: The Guinean environment is a natural, integral part of the universal heritage. Conservation, maintenance of resources it offers to human life, the prevention or limitation of activities that degrade or impair the health of persons and their property are of general interest.	

F. Indicate whether the project / program is already financed by other sources

This project is the currently the first integrated approach to scale-up climate-smart agriculture practices and planning across the two highly vulnerable regions in East Guinea-Bissau while contributing to institutional capacity building. The project components are based on the experiences GEF/UNDP project "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" (00077229), but will go beyond in terms of regional scope, integration of new agricultural technologies and the scope of monitoring & evaluation (M&E) and knowledge dissemination. GEF/UNDP project 00077229 is foreseen to end its activities by end of 2015 so that duplication of funding sources can be excluded. Other existing water and agriculture initiatives by government and NGOs in Gabú and Bafatá 'regions' do not currently integrate climate adaptation and resilience into their overall framework. These initiatives will be built upon for improved dissemination of project successes.

G. Where appropriate, indicate whether the project includes a training component and knowledge management to take stock of lessons learned and reapply them.

A specific component #3 ("knowledge management of lessons learned on climate-smart agriculture and adaptation planning") is included in the project, focusing particularly on outreach and information exchange. As detailed in section II.A of this proposal, different knowledge materials (manual, pamphlets, project website, newspaper media, calendars, conference presentations, etc.) will be produced for specific target groups (policymakers, field workers, farmers, scientific community, etc.), integrating practical lessons on climate-smart agriculture and water management in dryland regions. Further outreach will also occur at inter-ministerial meetings and COP/UNFCCC meetings. DGA/SEAD is the lead institution of this component.

The project monitoring and evaluation system will contribute significantly to technology performance management and traceability of transactions that have achieved the outcomes and decisions useful to action.

The results (outputs, outcomes and impacts) and lessons learned from the implementation will be: i) capitalized and archived electronically and physically in a documentation center and ii) shared/disseminated in various forms adapted to different target group.

All communication material on the project will bear the logo of Bissau Guinea, the Adaptation Fund and the BOAD.

H. Describe the consultation process, including the list of stakeholders consulted during the preparation of the project, with particular reference to vulnerable groups, including gender considerations, in accordance with the environmental and social policy of the Adaptation Fund

Public consultation during the preparation of the project, were conducted in accordance with the requirements of the Adaptation Fund. This consultation took place in several phases:

- a first consultation was carried out during the preparation of the project concept note (PCN);

- a second consultation during the study on lessons learned from the LDCF project being completed;
- a third in the identification of the potential sites of the project; and
- a fourth in the preparation of the Full Project; and

The objectif is to seek the views of the beneficiaries and to collect the basic information to enable better design of the project with particular implication of vulnerable groups, elders, women and youth.

The main objective of this approach of information, communication and participation of stakeholders was to create a mutually beneficial exchanges, favorable to an open dialogue with the aim of: (i) ownership of the project by beneficiaries at the stage of preparation and planning; (ii) the consideration of the concerns of all stakeholders including vulnerable groups (women, youth, children, etc.) in the design and implementation of the project; (iii) exchanges on financing and project sustainability.

During the project prepration a literature review was conducted. Interviews with person resource working in different ministries and structures involved were made. Field visits (potential sites and sites in exploitation) and interviews with the beneficiaries were made. This helped to establish in a participatory manner the context of project development, problems to solve, the types of adapted solutions, etc. and the consideration of the problems of vulnerable populations.

a) Public consultation during the PCN preparation

The consultative process for project development built upon networks established under the NAPA and SNCCC, and furthermore GEF/UNDP project "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" (00077229). Workshops and meetings have been held in Bissau with various Ministries and institutions, in addition to consultations with the project region's Rural Climate Change Forum (RCCF, see section III) and other local/regional authorities. Furthermore, a one-week field trip was organized by DGA/SEAD in 2015 in order to receive feedback on planned project activities and needs. The field visit focused on extremely poor communities and women integration (either organized in associations or not) which are a focal objective under this project.

In each village visited, following local customs, the project team began by asking the village head for permission to present the project idea and then asked him to call all household heads to participate in a group focus meeting. Talks were conducted in Guinea-Bissau Kriol by the project team or in any local language/dialect when participants of the team were not fluent in the vernacular language. These meetings included clear presentations of the project idea and objectives as well as a stocktaking of household/village needs (focusing at the intersection agriculture, water resources and climate risk management). Through this approach the precise adaptation strategy choice is being made by the communities themselves – following the example from the World Bank's approach and that of others, which do not specify activities before workshops, NGO projects and a typology list of activities that could be discussed at community level. Women's participation and empowerment through the project was also discussed openly where elders or the village head judged this as problematic.

The list of stakeholders consulted during the one-week field trip can be found in Annex 6. Figure below consists of four photos taken at these meetings; they give the idea that voice and opinion of women and poor were promoted during the consultation process. During these series of consultations, the gender element was very present (see figure below).



<u>Figure 25 :</u> Participation of stakeholders during consultative phase for PCN preparation in four tabancas

b) Consultations during the study on lessons learned from the LDCF project

This public consultation took place in the villages benefiting from the project. The purpose of the meetings held in villages benefiting from the LDCF project is to share with the beneficiaries the experiences and lessons learned from the project (technical and organizational strengths and weaknesses). The objective is to collect the beneficiaries' assessment of the project. The approach adopted and the free exchange between beneficiaries on the one hand and between beneficiaries and the study team on the other hand. This enabled beneficiaries to identify successes, failures and areas for improvement. The following pictures illustrate the public consultations in some of these villages.



Figure 26 : Public consultation in the village of Bajocunda during the lesson learned study



Figure 27 : Public consultation in the village of Copa Mango during the study on lessons learned

c) Public consultation during potential sites identification

During the identification of potential sites for the project, several villages were visited and consultations with the local populations were carried out. The objective was to share the ideas of the project with these populations, to inform them of the possibilities offered by the project. In each village, the sites that could be put into values were visited. Following this series of site visits and public consultations, 18 potential sites were identified at this stage. Additional technical and technical studies will make it possible to define a list of sites to be developed within the framework of the project. It should be noted that a call for applications will be launched for the final selection of sites on the basis of criteria which will take into account vulnerable groups, forests, protected sites, etc. The preliminary report identifying potential sites is attached as Annex 4 to this document.

d) Public consultation during the Full Project formulation

During the preparation phase of the Full project, a broad consultation of stakeholders involved in the project was conducted. In potential villages affected by the project, meetings with local populations were organized in order to exchange with them on aspects of the project, their opinions and their concerns. These meetings were attended by nearly 500 people in all. Village chiefs were heavily involved in public consultations. Exchange meetings were held in Bissau, Gabù and Bafatà. These meetings have gathered the heads of various sectors involved in the project. This is, among others, in charge of services: the environment, agriculture, forest and wildlife, livestock, fisheries, civil defense, health, meteorology, NGOs, etc. Meetings were also held with regional Governors and sectoral administrative autorities. So the team met with the Governor of Gabù, the Governor of Bafatà, the Administrator of Contuboel sector (Bafatà Region), the Administrator of Pirada sector (Region Gabù), the Secretary of the Administrator of Bambadinca sector (Bafatà Region), etc.



Figure 28 : Meeting with technical services in Gabù

In the villages a strong mobilization was observed. In the villages visited, the populations welcomed the project.





Figure 29 : Public consultation during the preparation of the Full project

Concerns raised by the populations during the public consultations

During these series of public consultations, populations have raised, apart from questions of vulnerability to climate change, food insecurity, poverty and malnutrition, concerns about agriculture, farming, forest management and drinking water supply. These concerns and their consideration in the project are summarized in the table below.

Sectors	Concerns raised	Taken into account in the project
Agriculture	Lack of water for the development of agriculture The inundation of the lowlands The silting up of the shallows	The project provided under component 2, the implementation of the infrastructure of mobilization of water for irrigation (outputs 2.1.1 and 2.1.2) Infrastructures to fight the flooding of agricultural land have been planned at the level of outputs 2.1.1 and 2.1.2. The project was included in the development of irrigation infrastructure, landscaping of the slopes against the silting up of the shallows through reforestation with plants adapted under the supervision of the Direction of waters and forests. (outputs 2.1.1 and 2.1.2)
	The delay of the rains and the early drought which occurs most often during the flowering of the crops	The mobilization of water is expected to extend its availability and cover the entire agricultural campaign (outputs 2.1.1, 2.1.2 and 2.1.4) The project will work in collaboration with the meteorological services for reliable information and better plan for the crop year. A suitable agricultural calendar will be established for this purpose. The gauges will be acquired under the project and installed in areas/villages of interventions to have rainfall records (output 2.1.5 (b)).

Table 15: Concerns raised by populations during public consultations and their consideration

Sectors	Concerns raised	Taken into account in the project
	The decline in the fertility of some soil on which agriculture is developed	The project also provided for the extension of short-cycle and drought-resistant seeds (output (2.1.3)) (b)). The project has programmed under the Output 2.1.3 actions to improve the fertility of the soil and the promotion of the production of manure to reduce the demand for chemical fertilizers. The courses are scheduled to build the capacity of producers in the use of fertilizers and pesticides (output 1.2.4).
	Lack of access to inputs (seeds, fertilizers, pesticides) quality	 The project has planned, under the Output 2.1.3 to grant support to farmers for access to quality inputs. The actions summarized in: support groups for the acquisition and the multiplication of quality seeds and construction of seed banks (2.1.3) (b)) Support for the purchase of fertilizers and pesticides of quality (2.1.3. (c)). Courses are planned at the place of the producers for the multiplication of seeds with the support of the National Institute of the agrarian research (INPA).
	Attacks of crops by pests and others leading to a partial loss of crops.	Support for the acquisition of quality pesticides (output 2.1.3 (c)) and the capacity building of producers for better treatment plant (output 1.2.4) will better protect crops.
	Lack of materials and equipment for production and development of products	The project will provide support to producers for the acquisition of 20 tillers, 1000 weeders, 60 yoked oxen and 20 hullers (Output 2.1.7). This activity will be conducted for demonstration.
Breeding	Lack of fodder and water for livestock with serious implications for the livestock production and income for farmers	The project provided support to the development of pasture and the production of the dry feed from brachiaria and other nutritious plants. Farmers will be trained on the techniques of forage production. Sheds for storage of dry fodder for feeding cattle in the dry season are planned in each area of intervention. Support will be provided to groups of breeders for their specialization in the production of seeds of brachiaria (Output 2.1.3).
		The project foresaw the realization of infrastructure of water supply for livestock under the output 2.1.2. There are access ramps to the Cocoli River by cattle (output 2.1.4).

Sectors	Concerns raised	Taken into account in the project
	Lack of corridors of transhumance leading to conflicts between farmers and agriculture	The implementation of the Outputs 2.1.2, 2.1.3. and 2.1.4.will stabilize the livestock and reduce conflicts between farmers and ranchers and transhumance.A large project is being initiated for the development of livestock farming in Guinea Bissau. This project will address issues related to transhumance corridors
Forests	Destruction of forests and plantations by Bush fires	It is planned to create brigades to fight bush fires and the capacities of committees of vigilance on Bush fires (output 1.2.5). These brigades and committees whose capacities to intervene are reinforced, will undertake the campaigns of sensitizing the populations on the fight against the bush fires and the techniques of fire. Awareness for the fight against the practice of slash and
		burn agriculture which is one of the causes of forest fires, will reduce this phenomenon.
Drinking water supply	Difficult access to drinking water in the villages	Access to drinking water will be improved under the output 2.1.4. Drinking water wells will be carried out in the villages that do not yet have access to drinking water. 30 drilling will be carried out to improve the supply of water to the populations.

All the concerns raised during the public consultations were taken into account in the planning of the project. Monitoring and evaluation actions will help to measure the level of satisfaction of these concerns with beneficiaries.

I. Justify the amount of funding requested, based on the full cost of the adaptation.

Basline scenario

Under a baseline scenario the semi-arid woodland savanna region would continue to be dominated by slash and burn, rain-fed agriculture and extensive-method for livestock. East Guinea-Bissau is already highly food-insecure, and under increasing temperatures it is highly likely that availability (production) and access (prices, income) to food would be further affected, potentially increasing the need for international food aid programs such as through WFP/FAO. Changes in total precipitation and higher drought or flood frequency would act in a similar direction.

While there is high uncertainty regarding the precise regional or local consequences of global warming, inaction would surely be detrimental for East Guinea-Bissau, both in terms of incurred losses due to current climatic variability and future change. Current coping practices (see Part I) by farmers in times of climatic stresses are clearly inadequate.

On the potential sites identified during the preparation of the present Full Project, farmers exploit the lowlands with traditional techniques and remain exposed to the adverse effects of climate

change, which is confirmed by irregular rainfall, floods and precipitous dryness Which sometimes occur during periods of bloom. The frequency of these floods and the precocious dryness compromise the efforts of the peasants to overcome the food needs. Production remains low and food security is not assured. Poverty and malnutrition are the daily experiences of farmers.

To deal with the precarious food situation, households are appeal to a number of survival strategies for their food namely reduction in the quantities consumed by adults including youth for the benefit of the children, (ii) less preferred food consumption; (iii) reduction of the amount of food eaten during the meal; (iv) the reduction in the number of meals per day; (v) selling household assets ; and (iii) dependent on the help of family or friend. These strategies not only to plunge people into a vicious circle where poverty and food insecurity are mutually reinforcing but show that there are real difficulties of access to food in Bissau Guinean rural and especially during the lean period.

In fact, reducing food consumption below nutritional requirements or selling household assets in order to survive in times of droughts directly reduces the vector of assets a family has to react to an additional year of poor weather; where reducing food intake and selling assets as coping strategy cannot be repeated each year. Poor households, especially those headed by women, are most exposed to shocks and seasonal variations in production, their vulnerability to future food insecurity increases.

In this context, socioeconomic scenarios point at increasing risks of poverty-related problems such as food insecurity, health or social welfare. Climate variability and change thus put heavy burdens on family farmers that will very likely exceed their coping capacities.

Alternative adaptation option

Faced with climate uncertainty and fragility of ecosystems that characterize Bissau Guinea, irrigation and crop yield improvement through the use of rainwater collection techniques appear to be the most important factors to throw the foundations for local and national economic and social development. The mobilization and control of water to meet the needs of irrigation and livestock become an imperative in order to improve food security and incomes of the population. The activities to fight against the flood and silting of parcels, the forest fire, to improve the soil fertility, livestock and domestic water supply, forage production, etc. will help to secure crops and livestock production, increase yields and incomes of the beneficiaries

The project's integrated approach integrates both concrete adaptations, as well as strengthening capacities across scales in adaptation planning and climate risk management. While the project represents only a first step in scaling-up successful actions and learning, it outcomes for the intervention region and country foresee a significantly positive alternative scenario compared to the baseline. In terms of the project interventions there are limited options available in terms of alternative actions to build climate resilience in the agriculture and water resources sectors. Additionality to a socioeconomic baseline scenario is hard to prove because of vulnerability's multi-faceted character (environmental, social, economic and institutional, among other).

The reinforcement of the technical and organizational capacities of the producers and the superimposition of the activities of adaptation on site are all actions that will contribute to the achievement of the results of the project, to reinforce the resilience of the populations to the

harmful effects of the climatic changes, to improve yields and production an finaly to reduce food insecurity, malnutrition and poverty..

J. Describe how the sustainability of results of the project / program has been taken into account in the design of the project / program.

The project sustainability is based on the strong involvement of national stakeholders (beneficiaries, ministries, civil society, private sector, etc.) at all stages of its design. Its implementation involves the participation of community organizations, beneficiaries, NGOs and the private sector. Each actor will contribute to a participatory approach where all activities will be conducted in close consultation with the beneficiaries.

The sustainability of the project outcomes relates to "practice-focused" component #2 (climatesmart agriculture and water management) and "capacity-focused" components #1 and #4 (technical capacity and outreach). Capacity-building at ministerial level will provide permanent benefits after project completion: trained government personnel will see their position strengthened, and may engage in future national adaptation project development, or continue research issues related to climate change and adaptation. Because of the project's novel but realistic character for Guinea-Bissau and the region of West Africa, its results will likely influence practice and policy beyond project implementation time.

Outcome sustainability of component #2 may be more complicated: even though local interventions may function at project end in 202, a principal concern would be the abandonment of these subprojects after technical assistance and regular visits from the project team cease. Participative and integrative processes are key elements to avoid these developments. This includes taking into account needs of the communities, respecting different opinions, creating a project ownership for the participating tabancas etc. The project will also monitor and evaluate (M&E) project implementation continuously; therefore reducing the risk that families may be unsatisfied with the interventions. Preliminary lessons from the ongoing GEF/UNDP-00077229 project seem to indicate that the risk of subprojects terminating after project teams have left is relatively low and manageable.

The project seeks commitment from the regional water authority (Regional Directorate of Water Resources) and other relevant local authorities to maintain small water retention and other infrastructure after project end, in line with the institutional set-up of GEF/UNDP-00077229 project. Villagers are to take ownership of other small scale infrastructure, and young men and female will be trained by the project to undertake smaller maintenances, thus also contributing to local capacity building and empowerment. This commitment has been obtained during the project consultation phase, and will be a conditionality for any subproject implementation.

The irrigation infrastructures are built for 30 years life. The Project management unit will select by application a local NGO, who will organize the beneficiaries in committees and subcommittees around each of the activities. The NGO will support beneficiaries in the implementation of a fee mechanism to allow each irrigated perimeter and each unit of supply of drinking water (drilling and ramps) of sufficient financial resources for infrastructure maintenance and continuity of operations (acquisition of seeds, fertilizers, pesticides and small equipment of exploitation, etc.) in the short, medium and long terms.

The funds collected by the various subcommittees will be deposited on an account of a bank or a microfinance institution created on behalf of the beneficiaries of the site in question. At the level of each Management Committee, the cash will be preferably held by women known for their honesty and good management of public goods.

To enhance the organization and the operationalization of the Committees and Subcommittees, the NGO can build on the experiences of Niger and other countries.

Not only the project releases a total profit of 5 554 420 USD annually, it is expected a financial participation of beneficiaries in the maintenance of infrastructure and the actions of fire brigades amounting to 457 284 USD per year. This will ensure optimal operation of the infrastructure, a development of the appointed areas and management of bushfires for 30 years. With the climate-smart technical capabilities acquired and substantial profits by the groups, they can invest in the expansion of areas for a greater production of rice and vegetable products. This will help to ensure food security at the national level.

K. Provide an overview of the environmental and social impacts and risks identified as relevant to the project / program.

Environmental and social classification of the project

The Adaptation Fund presents a set of principles by which it enacts environmental and social safeguards applicable to the projects it finances.

The main activities of the project include: (i) socio-climatic vulnerability assessment for East Guinea-Bissau; (ii) assessment of technical capacity building needs of ministries and field operatives for adaptation planning; (iii) formulation of detailed intervention plan for pilot climatesmart agriculture actions and policies, procedures and guidelines related to climate change, gender and natural resources; (iv) technical trainings on adaptative systems and organizational capacity building for identified target groups; (v) technical assistance and rural extension for subprojects; (vi) formulation/Update of contingency plans for climate-risk management; (vii) support for famers groups by the government technical experts for adaptation actions implementation; (viii) capacity building to prevent forest fires; (ix) Development of lowlands to maintain agricultural production in drought periods; (x) Construction of micro-dams for irrigation of rice, vegetable crops and livestock water supply; (xi) rehabilitation/improvement of soil and pasture productivity and small-scale investments into agriculture inputs (seeds, ferltilizers, pesticides quality), machinery and tools; (xii) construction of drills/wells and ramps for improved livestock and domestic water supply and market gardens development; (xiii) development of knowledge management strategy; (xiv) creation and operating of the project website; (xv) development of manual and other materials on best practices and measures for climate-smart agriculture; and (xvi) dissemination of results to other regions of Guinea-Bissau and West Africa.

Capacity-building activities of technical services and producers groups will have positive impacts on the management of climate resilient farming practices and the environmental management of the project (see detail of positive impacts under the item II.B). However, though activities that aims to set up water mobilization infrastructures will reduce flooding, they will lead to the drying up of crop plots, loss of production and thus entail negative impacts that need to be analyzed. The development of these infrastructures on the identified potential sites will neither cause the relocation of population nor affect any natural habitat. It will not involve irreversible effects on the biophysical and human environment. Under this project, water mobilization infrastructure is small size and includes retention dykes and bunds of up to 2 m in height, levee dykes, mini-water retention ponds which height does not exceed 2.5m, drills for the development of garden products and the supply of safe drinking water for the population and the livestock.

According to the environmental and social policy of Adaptation Fund, all projects/programmes likely to have significant adverse environmental or social impacts that are for example diverse, widespread, and irreversible should be categorized as Category A. Projects/programmes with potential adverse impacts that are less adverse than Category A projects/programmes, because for example they are fewer in number, smaller in scale, less widespread, reversible or easily mitigated should be categorized as Category B.

The principles applicable in the context of the project, according the activities and the principles of Adaptation Fund are presented in the following table.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and Management required for compliance
Compliance with the Law		Х
Access and Equity		Х
Marginalized and Vulnerable Groups		X
Human Rights		Х
Gender Equity and Women's		X
Empowerment		
Core Labour Rights		Х
Indigenous Peoples	Х	
Involuntary Resettlement	Х	
Protection of Natural Habitats		Х
Conservation of Biological Diversity		Х
Climate Change		Х
Pollution Prevention and Resource		Х
Efficiency		
Public Health		X
Physical and Cultural Heritage		X
Lands and Soil Conservation		X

Table 16: Determination of triggered E&S principles of the Adaptation Fund.

Despite the positive impacts that can enhance the project results, the activities of the projectwill presente adverse environmental and social impacts. Many environmental and social principles of the Adaptation fund are triggered by the project in terms of environmental and social impact and risks (see table above). But, after analyzing the project through the Environmental and Social screening, the potential adverse environmental or social impacts of the project are few in number, small in scale, very limited, reversible and easily mitigatable. Thus, the characteristics of the project correspond to a Category B project as provided by the environmental and social policy of Adaptation Fund. The project is classified as Category B.

The environmental and social impact assessment of a such project is to examine the positive and negative effects that the project could have on the environment and populations, and recommend any measures needed to prevent, minimize, mitigate or compensate for adverse effects and improve environmental performance. Thus, taking into account the national standards that the project must comply with, the foreseeable risks and impacts in the implementation of the project and its classification according to Adaptation Fund ESP, the project is subjected to a simplified environmental and social impact assessment but also to the preparation of a pesticide management plan. Because the localization of the intervention areas of the project is not really done, the national regulation has recommended the formulation of an environmental and social management framework (ESMF) for the project. The complementary Environmental and social management plan (ESMP) will be prepared for the sub-projects.

For the Full Proposal an Environmental and Social Management Framework (ESMF) is carried out according the 15 principles of the Adaptation Fund.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	No project component or activity contravenes any laws or regulations currently in force in Guinea-Bissau. The project complies with the country's legal framework for agriculture, water and environmental protection. For the Full Proposal an Environmental and Social Management Framework (ESMF) is prepared and the pests and pesticides management plan (PPMP) have been developed. The environmental and social policy and principles of Adaptation Fund and the environmental and social safeguards of west African Development Bank are used for the ESMF	Very weak. The Environmental and Social Management Framework Plan is prepared for the project. It will be adapted for each site on the based of the ESMFP.
Access and Equity	The intervention logic of the project is to provide potential beneficiaries in the target region with fair and equitable access to project activities and equipment throughout both planning and implementation phases. All producer groups which request participation will have an equal opportunity to benefit from the adaptation activities proposed by the project. Eligibility criteria of the project will be clear and transparent, and defined together with all relevant stakeholders, including traditional authorities. For the project interventions	Very weak. The project implementation will guarantee access and equity to sensitive groups (including gender, elderly).

	it is planned to include (1) -1111 - 1	1
	it is planned to include (i) difficulty of access to water in the area; (ii) vulnerability in terms of biophysical and climate risks; and (iii) social vulnerability as selection criteria. Through these criteria the project will assure the participation of less empowered groups, including women, minorities and particularly vulnerable groups. The project's results-framework will measure developments related to 'access and equity for vulnerable groups' throughout the project duration.	
Marginalized and Vulnerable Groups	The project focuses on marginalized and vulnerable groups (minority groups, women, extremely poor, elderly, children etc.) and aims to assist them to improve their agricultural practices and living conditions. As such the project is not expected to have any negative impact on these groups. The consultation phase has identified Fula, Mandinga and Dgancanca ethnicities in the project region. Both Fula and Mandinga are majority groups, and work as farmers and ranchers, whereas Dgancanca constitute a minority group working with rice farming. Each community has its own lands at their disposal; therefore the project activities can be carried out without problem in collaboration with each ethnicity. The project will work with the majority and minority groups.	Very weak. The Full Project Proposal follow and will relevant West African Development Bank (BOAD) environmental and social safeguards for the full project development. These include: (a) screening of communities; (b) social assessment of needs and conflicts; (c) free, prior, and informed consultation with the affected groups.
Human Rights	The project affirms the fundamental rights of people in the intervention areas, and thus does not affect their freedom. Furthermore, the project does not integrate any activities contrary to custom law or traditions. Participation in the project cycle will be participatory and voluntary	Very weak. In particular, the RCCF and village heads will be consulted to avoid any negative impacts on human rights.
Gender Equity and Women's Empowerment	The logical framework of the project foresees direct participation for women and women's associations so they can benefit directly from project. In particular, the project proposes to support women to develop sustainable income generating activities and improve thereby their living conditions, therefore also empowering them in the context of a largely traditional and male-dominated society. The project will also promote women's participation in the RCCF and other regional and local fora: first, it is planned that the two honorable members from traditional authorities	Very weak. In Guinea Bissau, the women are the most farmers cultivative rice and working in gardens field. So, they will the largest beneficiaries of the project. Progress with regards to women's participation and equity will be measured through the project's M&E framework, so compliance is not a problem.

Core Labour Rights	involved in development issues in the project region (one from Gabú, one from Bafatá) from the Rural Climate Change Forum (RCCF) will be one female and one male. Second, the pre-selection committee (RPPSC) to be created for the selection of subproject activities will be composed of four important and respected traditional authorities of the RCCF (one male and one female from Gabú, one male and one female from Bafatá) in the project region. Participation of women and empowerment will also be a key focus of the project's M&E framework. Core labor rights concern gender aspects, respect for workers; maximum work hours: child labor; etc. The project	Very weak. Monitoring on core labor rights will be undertaken throughout the project
	work hours; child labor; etc. The project will ensure that national working standards are respected on production sites. The project will also ensure that appropriate wages will be paid per assigned task, and that no child labor will be employed. Social security standards (e.g. access to first aid) will also be respected and enforced.	project.
Indigenous Peoples	The preliminary screening has not identified any indigenous communities in the project areas.	-
Involuntary Resettlement	The project will not be developed on any site requiring the resettlement of populations (gives criterion of choice of sites)	-
Protection of Natural Habitats	All project activities will be carried out on areas already under production by farmers, and the project will teach farmers practices to dispense traditional slash-and-burn agriculture practices, therefore reducing pressures on deforestation. Furthermore, the project will work with water-saving irrigation techniques to limit runoff and soil erosion in the project area. Nevertheless, the project may cause negative impacts on the biophysical environment, including natural habitats, if project activities are not monitored consequently. For this reason the ESMP (Full Proposal) is prepared and M&E framework will focus on assessing potential risks and impacts on natural habitats.	Weak. ESIA and M&E activities in order to identify potentially adverse risks and impacts on natural habitats.
Conservation of Biological Diversity	The project will adopt agricultural practices that increase biodiversity compared to the baseline scenario, including conservation agriculture and agroforestry. Furthermore, the project	Weak. The ESMP demonstrated that the risks and impacts of mini- water retentions on biological diversity are very weak. If any, the mitigation measures are planned according to the

Climate Change	will not introduce any exotic or invasive species of crops in the intervention areas. The brachiaria and legumes that will be promoted in the production of fodder for livestock, are local plants which integration will cause no problem. However, as noted before, small-scale water retention and irrigation may impact biodiversity particularly when areas need to be cleared	environmental and social policies of the Adaptation Fund, the environmental and social safeguards, including gender mainstreaming, of the West African Development Bank (BOAD) as well as relevant national environmental and social regulations.
Climate Change	Focus of the project is climate change adaptation through climate-smart agriculture, which from a climate perspective incorporates resilience (adaptation) and reduction or removal of greenhouse gases (GHG) (mitigation). All adaptation actions undertaken under the umbrella of this project will need to be assessed constantly in order to understand whether they contribute to building of resilience under increasingly variable climate. The final assessment of the project as well as the socio-climatic vulnerability assessment will support achieving this principle. Potential impacts on land use will also be registered, thus contributing to the assessment of GHG emissions reductions (mitigation). Water resources are currently exposed to various forms of pollution associated with the use of fertilizers and pesticides	Weak. The ESMP demonstrated that the risks and impacts that the pollution of water and soil can be avoided. An Pest
Efficiency	and manure. The project will work to prevent these types of pollution. There may be further pollution linked to the construction of small water retention, including deterioration in water quality downstream, or detrimental effects through limiting access to water by downstream users.	and Pesticides management plan is prepared. The deterioration of water quality is most often due to the fact that fertilizers and pesticides are not used in an efficient and timely manner. In order to prevent deterioration of the quality of the soil and especially of water, the project envisaged activities to strengthen producers' capacities in the use of fertilizers and pesticides (ouput 1.2.1.). On-site technical support for the proper management of fertilizers and pesticides will be provided to producers by the technical services (output 1.2.4). In addition, periodic water analyzes are scheduled in order to monitor the evolution of water quality and prevent its pollution

Public Health	Disease-burden may be linked to vector- borne diseases of small water retention. Otherwise, the project will promote organic fertilizer use and sustainable practices that may be beneficial to human health. By increasing food production and variety thereof the overall health of the population will be strengthened as calorie intake rises and nutritional quality of the food consumed is higher.	Weak. Mitigation actions are planned in the ESMFP in order to discern health impacts due to vector-borne disease occurrence, caused by small dam construction.
Physical and Cultural Heritage	No adverse impacts on physical and cultural heritage of the people in the intervention areas were identified. A public consultation was conducted in the project areas. The chances of damage to physical assets are extremely low.	Very weak. One of the criteria of selection of the intervention area is: "Not located in a known cultural heritage area or suspected to be sheltering a cultural heritage". This criterion enables to limit the risks related to the destruction of the cultural and physical heritage. However, incidental findings are not excluded on non-suspected sites. Thus, the risk of destruction of physical and cultural heritage during the incidental findings is present. Thus, in case of fortuitous discoveries of physical and cultural heritage, mitigation actions are planned in the ESMFP.
Lands and Soil Conservation	The project will have positive impacts on the landscape of the intervention areas through the establishment of agro forestry systems and conservation agriculture. Soil conservation and restoring fertility is a key project activity.	Very weak. The project actions will improved the fertility of the soil and the sustainable management of the Lands.

Project generic impact assessment

- Project impacts identification

The identification of impacts is based on the adapted Leopold matrix, which links the expected impact-oriented activities per phase and the environmental and social principles of the Adaptation Fund. The crossing of the two parameters makes it possible to identify the impact of the activity on the environmental component considered in the corresponding E&S principles of the Adaptation Fund.

In summary, taking into account the analysis made from the table below, the predictable impacts.

Interactions between activities sources of i	mpact by p	hase of the p	project following	the princi	ples of the Adaptation Fund

		Princi	ples	of the A	dapta	ation Fu	nd									
Phases	Sources of impacts of the project components and activities	Compliance with the law	Access and equity	Vulnerable and marginalized groups	Human rights	Gender and women's empowerment	Working conditions	Indigenous peoples	Involuntary	Protection of natural	Conservation of biological diversity	Climate change	Pollution prevention and management efficiency of	Public health	Physical cultural	Land and soil conservation
	Launch of the project				_											
Preparation phase	Activities to strengthen technical, organizational and institutional capacity		x	x		x										
	Realization of in-depth APD	X														
	Call for tenders and Acquisition of equipment			X												
Construction	Mobilization and transfer of equipment to sites													x		
phase	Installation and construction downturn	X			x		x			x	x					
	Implantation															
	Preparation and field stripping															
	Infrastructure construction				x		x			х	х	х				x
Operating	Soil preparation and plowing															
phase	Acquisition of improved seeds									х	х					
	Seedlings						x							x		
	Water exploitation												х			
	Operationalization of Structures						X				х				X	х
	Maintenance of works and cultures				x											
	Acquisition and application of fertilizers (organic manure or chemical fertilizer);		x	x	x	x	x			x	x		X	x		x
	Use of pesticides		Х	x	х	x	х			х	х	х	х	х		х
	Rejection of the packaging of pesticides										x		Х	x		x
	Harvest															
	Income generating activity		х	х		X								X		
End of project	Abandonment of equipment															
	Dismantling			1			х						x	x		

Two types of impact can be identified: positive impacts and negative imapcts.

Positive impacts are described under item II. B

Description of the environmental and social negative impacts and risk

The table below describes the negative environmental and social risks and impacts of the project as a whole. These negative impacts and risks can arise in one or the other phase of the project, namely: project preparation, construction of infrastructures, operationalization of project sites, and completion of the project.

Triggered principles E & S of the FA	Impacts / risks identified	Description of the impact or the risk
Compliance with the law	Low integration of environmental and social issues during the implementation of the project	In accordance with the national legislation of a management plan and management of the environment and the health of the population, to the environmental and social policy of the adaptation fund, a framework of environmental management and social (CGES) plagues and pesticides (PGPP) have been developed for the whole project. The CGES and the Full Project recommend the preparation of the environmental and social management plans sites definitely used to be developed taking into account the specificity of each of the sites. So, There is therefore a risk that environmental and social issues may not be sufficiently addressed if the preparation of GGP is not conducted by structures with the necessary capacity.
	Low capacity to producers for the implementation of environmental and social measures, in accordance with national law and the principles of the FA	Environmental and social impact studies or records of environmental and social impact made on behalf of the subprojects will be accompanied by environmental and Social Management Plans according to the environmental and social principles of the FA. The prescribed measures will be implemented on plots by the producers. However, there is a risk to the low ability of producers to implement environmental and social measures proposed, in accordance with national law and the principles of the Adaptation Fund (AF).
Access and equity	Risk of increase in inequalities between women, men, children and particularly vulnerable groups	Producers are, in their majority, the poor who are often not integrated into the decision-making process. They are men, women and young people. There is therefore a risk of lack of access to the resources of the project by the producers at the level of the technical and organizational capacity-building, access to the facilities of modern irrigation techniques, access to farm inputs of quality and development of revenue-generating facilities.

Triggered principles E & S of the FA	Impacts / risks identified	Description of the impact or the risk
	Risk of not full participation of certain groups in the preparation and the implementation of the subproject	There is a risk that all members of the beneficiary groups are not involved in the preparation and the implementation of subprojects
Marginalized and vulnerable groups	Risk of no involvement of marginalized and vulnerable groups in the provision of the resources of the project	Under the project, it is proposed to strengthen the irrigation system to diversify agricultural production and reduce the vulnerability of farmers to the harmful consequences of climate change. With this approach, the project will ensure better adaptation to climate change that affects the production and productivity. The activities will contribute to create assets for long-term recipients. The activities of the project will also help create livelihoods and income for farmers. There may be the risk that these vulnerable and marginalized groups are not involved in the technical and organizational capacity-building provided under component 1, not have access to modern technical equipment of irrigation under component 2, or lack of agricultural inputs and quality of income-generating activities under component 3 of the project.
Fundamental labour rights	Risk related to the health and safety of workers	During construction works, and during their operation, workers are exposed to the risk of accident at work that can go from simple death injuries. It is similarly during preparation of the soils, plowing operations, maintenance, etc. The supply of agricultural inputs also presents risks of transit traffic accident. Some producers may be exposed to the risk of poisoning if they are not trained in the use of pesticides, and if they have no individual protection equipment.
	Risk of child labour outside the limits of the law	In rural areas, children help parents in field activities. Under the project, it is not excluded that children are used to difficult tasks
Gender equality and empowerment of women	Insufficient taking into account of gender in the implementation of the project	Women and young people were consulted widely at the stage of identification and design of projects. It is important to be sure that they will be actually involved in the phase of implementation of the project which will be carried out by the project management unit which is not yet in place.
Protection of naturalvegetation and wildlife habitatand Wildlife Habitat on		Development can cause the destruction of vegetation and Wildlife Habitat on the site
habitats		Strip of land and the use of fertilizer and pesticides can contribute to the degradation of soils

Triggered principles E & S of the FA	Impacts / risks identified	Description of the impact or the risk
	Risk of d the quality of the water and soil egradation	The use of pesticides and chemical fertilizers can be sources of impairment of the quality of water and soil
Pollution prevention and efficient management of resources	Contamination of soils and waters by pollutants	The development of the project will require the use of pesticides under the pest control. Using rational number of pesticides and chemical fertilizers on the plot may cause pollution of water and soil
Public health	Risk of poisoning by inhalation or by consumption of water or food contaminated by pesticides or fertilizers	The implementation of the project has risks to human health through the use of pesticides and other chemicals on the plots. Exposure to pesticides can be direct (contact) when applying, passing over a treaty site or secondary or indirect (for water, food) and is likely to affect the entire population in this case.
	Development of water-related diseases	The continued presence of the irrigated water could cause the development of waterborne diseases (malaria, typhoid fever, amoebic dysentery, etc.).
Physical and cultural heritage	Risk of destruction of the physical heritage during incidental findings	Although the identification of sites takes into account the protection of the physical cultural heritage, incidental findings are not excluded during the implementation of the project. Is the risk of destruction of the physical and cultural heritage during incidental findings
Land and soil conservation	Deterioration in the quality of the soil and the Earth	Although the subproject includes reforestation activities and seeks to promote agroforestry, some activities can have a negative impact on the quality of the soil including the use of pesticides and chemical fertilizers. Rational use of fertilizers and pesticides use will lead to pollute and degrade the soil. Chemical residue may form with other natural compound in the soil and degrade the complex soil pH and cause acidification.

The impact/risk and mitigation measures are contained in table 24, under Item C of PART III.

PART III: IMPLEMENTATION MODALITIES

A. Describe the implementation modalities of the project/program.

PROJECT IMPLEMENTATION ARRANGEMENT

The General Direction of Environment (GDE) of the Ministry of Environment and Sustainable Development of Guinea-Bissau (MESD) will be the executing entity and BOAD will be the emplementing entity for this project.

The project management committees/bodies are: (i) Project Steering Committee, (ii) Project Management Unit, (iii) Technical Committee for subproject proposals review; (iv) Sub-Project Approval Committee, (v) Perimeters (developed sites) Management Committees, (vi) Drinking water infrastructure for population and livestock management Committee, and (vii) Pasture management Committee.

- Project Steering Committee

Created by Ministerial order of the Ministry of Environment and Sustainable Development, the Steering Committee is responsible for the strategic direction and supervision of the implementation of the project. It approves Annual work plans budgeted (AWPB) and meets twice a year. It is chaired by the General Secretary of the Ministry of Environment and Sustainable Development and includes all stakeholders taking into account the key actors. A national technical planning workshop will be organized once a year, prior to the first session of the steering Committee. This workshop will bring together all actors involved in the technical implementation of the project. The procedures manual will specify the relevant structures. The Steering Committee of Project will serve as a space for debate on themes concerning the Project and interdepartmental coordination of project activities. It will review and approve the Manual of procedures, schedules, progress and audit reports of the project. This board is to be composed of:

- (i) representatives from relevant ministries and public organisms, including: Ministry of Environment and Sustainable Development, Ministry of Agriculture, forest and livestock, General Direction of Water Resources, Ministry of women, family and social solidarity, Ministry of Economy, Planning and Regional Integration, National Institute of Agrarian Research (INPA), National Research Institute (INEP), National Meteorology Institute (INM-GB);
- (ii) representatives from civil society: three (03) representatives of Rural Climate Change Forum (RCCF), with one traditional authority and two (02) women from Gabù and Bafatà ; two (02) representatives of NGO's association/platform (one from Gabù and one from Bafatà) ; two (02) representative of women Groups (one from Gabù and one from Bafatà).

- Project Management Unit

GDE/MESD will put in place a project management unit (PMU) whose role will be to (i) ensure the overall project management and monitoring, in accordance with Adaptation Fund rules; (ii) facilitate communication and networking among key stakeholders in Bissau; (iii) organize the meetings of the Project Steering Committee (PSC); and (iv) support local stakeholders to realize the project's objective.

The proposed structure of the PMU consists of a Program Manager which will also function as National Project Coordination (NPC) and the support staff. The role of the NPC is to oversee the implementation of the project, including administrative and technical coordination and reporting back of progress upon feed-back received from the project partners, BOAD, Adaptation Fund and MESD.

The PMU will consist of one National Cordinator (NC) one dedicated field coordinator, an agronomist expert based in Gabù (FCG) and one Assistant dedicated field coordinator, an adaptation Expert based in Bafatà (FCB), one Specialist in policy and regulatory development and capacity building in climate change and environment, one Communication Expert. The PMU staff will include: an accountant (Specialist procurement), a secretary, three drivers, two housekeepers (Gabù and Bafatà), and two guardians (Gabù and Bafatà). The National Project Coordination function will be supported by streamlined secretarial, logistic and administrative support in Bissau, Gabú and Bafatá.

The FCG and the FCB, in complementary collaboration, will lead the technical implementation process of Components 2. The technical implementation of the project Component 1 will be leaded by a Specialist in policy and regulatory development and capacity building in climate change and environment under the responsability of the National Coordinator. The technical implementation of the project Component 3 will be leaded by a Communication Expert under the responsability of the National Coordinator will be specifically in charge of component 4 relative to the project management.

The NC, the Specialist in policy and regulatory development and capacity building in climate change and environment, the FCG, the FCB, the Communication Expert, the proximity support facilitators/animators and the other experts shall be recruited through a selective process. Selection and contracting will follow relevant national legislation and/or BOAD/Adaptation Fund requirements.

The project will be implemented in collaboration with the relevant Ministries as Ministry of Environment and Sustainable Development, the Ministry of Agriculture, forest and livestock, the General Direction of Water Resources, the Ministry of women, family and social solidarity, research institutions on seed production, water use and quality with the support from local communities, private sector associations, NGOs and other representative civil society, technical organisms, regional governments, rural extensionists, and other regional/local partners.

The technical implementation in the field will be supported by local associations, NGOs, women's associations, respected elders and traditional chiefs, particularly through the channels of the existing Rural Climate Change Forum (RCCF) in the Project Region. The RCCF will discuss and evaluate with the villagers and agriculture groups project activities, send in suggestions for improvement, and provide close ties with the tabancas. Through the RCCFs, Sanitary Vigilance Committees further safeguards for forest preservation and climate change sensibilization will also be implemented. With the support of the Ministry of Environment and Sustainable Development, the Ministry of Agriculture, forest and livestock, the General Direction of Water Resources, the Ministry of women, family and social solidarity, the RCCF will assure that the Project's activities continue after end of the official project.

Apart from the team forming the PMU, the project will use the services of building companies and

external consultants such as: a hydraulic engineer, Pastoralist, agro-sylvo-pastoral system, etc.

- Technical Committee for subproject proposals review

As part of the implementation of the project, a technical committee will be set up to review the subprojects proposals. It will consist of: (i) one expert of agriculture; (ii) one expert of hydraulic management; (iii) one expert of livestock; (iv) one expert of the Competent Environmental Assessment Authority (AAAC); (v) one expert of forest management; (vi) two representatives of PMU. This committee will be responsible for the subprojects proposals technical analysis according to the selection criteria set up by the PMU.

- Regional Approval committees

The regional approval committee is represented by the Regional Planning Office put in to place by the national texts to ensure the regional development planification. According to thenational development texts, each micro-project must go through the Regional Planning Office before being submitted for funding. The project will be executed in two regions. There will therefore two regional approval committees: (i) Gabù region sub-project Approval Committee; and (ii) Bafatà region subprojects Approval Committee.

The Regional Planning Office is the consultative body for the intervention of the different actors in the development process of the regions. Its functions include: (i) identify, formulate, implement and monitor of projects; (ii) monitor the development and implementation of micro-projects in the region; (iii) provide assistance to villages with the development activities; etc.

The regional Governor is the President of the committee. The Regional Director of Planning and Statistics is its Executive Secretary. The Regional Administrative Secretary of the governorate is the Secretary of the committee. Apart of these members, each Regional Planning Office is composed, inter alia, of:

- representatives of the Regional Directorates for: Agriculture, Natural Resources (Environment), Poverty alleviation, Finance, Health, Justice, Meteorology, Public Works, Education, Guard -budgetary, etc.;
- > a representative of national and foreign NGOs;
- > a representative of the Institute of Women and Children;
- \succ a representative of the media;
- \succ a representative of civil society;
- > a representative of the religious entities;
- > a representative of the traditional society.

See annex 14, the competencies and composition of the Regional Planning Office.

- Perimeters management committees

In the practice in Guinea Bissau, the management committee is set up in the developed perimeters for rice production. In the framework of the LDCF project, the organization of the perimeters committees is ongoing.

On each site of the Adaptation Fund project, a Management Committee of the perimeter will be set up. This Committee will be to ensure good management and the functioning of the entire

perimeter. It will ensure good planning of the crop year, the implementation of devices to support better agricultural production. Under the management of the perimeter, one will distinguish four subcommittees: (i) the Seed subcommittee, (ii) the Plowing subcommittee, (iii) the Irrigation Infrastructure Management subcommittee, and (iv) the Fertilizers and pesticides subcommittee. The role of its subcommittee is described below. Each perimeter management Committee will be composed of thirteen (13) members consisting of: (i) a Chairman of the Committee elected from among the beneficiaries; and (ii) three (03) representatives of each Subcommittee (president, Treasurer and Secretary of the Subcommittee). The Committee will meet once a month to reflect on the conduct of the campaign, problems and approaches to solutions. The representatives of each Subcommittee will point to the members of the Committee and will be responsible for disseminating the decisions taken at the level of the Committee of management of the perimeter. Each Subcommittee will be made up of nine (09) members including five (05) women and four (04) men.

The roles of subcommittees are:

> The Subcommittee of seeds

Availability in time of the resistant and profitable varieties is important to the success of the crop year. The Subcommittee of the seeds will be responsible for monitoring seed multiplication in order to ensure sufficient seed availability for the entire perimeter. This Subcommittee will work in collaboration with the General Directorate of agriculture and the national Institute of agronomic research (INPA) for the acquisition of quality seeds. This Subcommittee will participate and will follow the training on the multiplication of seeds scheduled in component 1 of the project.

> The Subcommittee of ploughing

The preparation of the soil is an important step for any culture. Sit a good seedling or a repiquetage to allow a rigorous development of the plant and a good production is necessary. Labour Committee will be responsible to track all activities relating to the preparation of the soil (cleaning, pre-irrigation, ploughing, milling). He will be responsible for the planning of labour in a sense of respect for the cultural calendar. This Committee will be responsible for maintaining plowing equipment in good working condition.

> The Sub-Committee on management of irrigation infrastructure

Irrigation and maintenance of irrigation infrastructure is essential for the carrying out of an agricultural season. The Irrigation Infrastructure Management Subcommittee will be responsible for ensuring the proper functioning of water retention, irrigation and perimeter protection structures.

> The Subcommittee of the fertilizers and pesticides

With regard to fertilizers and pesticides, the subcommittee that will be responsible for them will ensure their timely availability and distribution according to well-defined criteria in collaboration with the PMU. The committees will also be responsible for interacting with the Regional Directorates of Agriculture to ensure the availability of good fertilizers and pesticides and their proper use during each crop year.

- Management committees of the water works to supply water to livestock and population

To ensure the management and maintenance of the infrastructure of water supply for the population and livestock (water borehole and ramps), a water management Committee will be set up in each beneficiary village.

- Pasture Management Committee

In each concerned sector, it will be implemented a pasture management committee. This Committee will be in contact with the coordination of the project for the acquisition of the strains of brachiaria, services of livestock for vaccination of cattle, the Management Committee of the perimeters and hydraulic infrastructure for easy access and joint management of water resources, forest services for the management of Bush fires.

SUBPROJECT IMPLEMENTATION APPROACH

The project that will be implemented in the northern parts of the regions of Gabù and Bafatà namely the sectors of Sonaco, Pirada, Pitche, Gabù, Cuntoboel and Ganadu, aims to address key vulnerabilities in agriculture and water resources management, and thus contribute to immediate and longer-term development and resilience needs of extremely vulnerable farmers, with a focus on extremely vulnerable groups: women, youth, elderly and children. For this purpose, the following three main components have been considered: (i) Development of technical and institutional capacity to address the increase of climate risk with the adaptation practices and planning; (ii) Enhance the resilience of existing agricultural productive systems, including water control; and (iii) Knowledge dissemination of lessons learned on climate-smart agriculture and adaptation planning. This project will be implemented through sub-projects which will be subject to a selection process.

Within the framework of the project implementation, two types of activities can be distinguished: 1) one that will be choosen by the communities for the development of the subprojects, and 2) one that have already been decided in the proposal and which will not be decided by the communities.

<u>The type 1 activities</u> which will be choosen by the communities for the development of the subprojects:

These activities concern:

- construction of dams and development of downstream lowlands;
- development of lowlands without dams;
- construction of drills/wells to improve livestock and domestic water supply;
- development of market gardens with drills construction;
- support for forage production for livestock.

All these activities are described under component 2 namely outputs: 2.1.1; 2.1.2; 2.1.3; and output 2.1.4.

The type 2 activities which have already been decided in the proposal

It concerns:

- all activities under component 1 (Development of technical and institutional capacity to address the increase of climate risk with the adaptation practices and planning);
- all activities under component 3 (Knowledge dissemination of lessons learned on climatesmart agriculture and adaptation planning);
- some activities of component 2 :
 - support to access improved, resistant and short cycle seeds;
 - support to groups for acquisition of quality fertilizers, quality pesticide;
 - support for the acquisition of equipment/facilities of production and development of products for demonstration.

Although potential sites have been identified during project formulation, a call for the sub-projects proposal will be launched to allow farmers to express their interest in the project. Each subproject can be designed on the basis of the type 1 activities by the applicants (target groups) and submitted to the governor of the Region.

The following lines were defined to guide the sub-project selection process.

Step 1: Information on the Project approach and call for subproject proposal

A large public consultation is conducted during the project preparation. This stage is to be completed within the first 6 months after the establishment of the Project Management Unit. The information on investment opportunities among target populations, the intervention strategy of the subproject, the process of formulation of applications by promoters (famers groups), the technical review and the validation process will be disseminated at this step. This, to enable the promoters of subproject express their interest to the project. After that, there will be a call for project proposal.

The criteria for selection of the sub-project will be prepared by the Project management unit (PMU), and made available to subprojects promoters, regional technical review committee to select the best subprojects and the regional approval committee to approve the best-subproject. One of the criteria will be the willingness of sub-project promoters to put in place an infrastructure maintenance device in the short and long term.

The sub-projects selection criteria prepared by the PMU will be disseminated in the folder of call for project proposal.

Step 2: Selection of the potential beneficiairies by the technical review committee

At this step, the expression of interest will be formulated by the applicants. The requests formulated by several villages and/or several farmers groups should be encouraged by the PMU. The requests will be sent to the Governor of the region.

As mentioned above, in addition to the potential sites that have been identified, any other site that can be assigned to type 1 activities can be considered in the selection of subprojects. In order to select the best sites and the most interesting potential beneficiaries, a call for expressions of interest will be launched. Farmers' and breeders' groups, villages and groups of villages will address their request to the governor. NGOs working in the two regions will be recruited on the basis of a call for applications to prepare an expression of interest for each applicant.

Expressions of interest registered by the Regional Governorate will be forwarded by the Governor to the Sub-Projects Technical Review Committee for the pre-selection of beneficiaries. The composition of the Technical Review Committee is described below. The Technical Review Committee, on the basis of the following criteria, will select the sites for which the subprojects may be prepared:

- the applicant's level of vulnerability to the variability of climate change;
- the real needs of the applicant;
- the adequacy of the site in relation to demand;
- the level of organization of the applicant;
- the level of interest of women and young people in the applicant's organization;
- the applicant's experience in the activity for which he/she would like to position himself;
- the commitment of the applicant to comply with the technical, financial, environmental and social rules of the project;
- availability of suitable land for perimeters;
- availability of groundwater for drinking water infrastructure and gardens;
- the number of operators to judge the per capita investment of beneficiaries;

- the contribution of the beneficiaries to the work;
- etc.

These criteria may be strengthened by the Project Management Unit depending on the progress observed in the field.

Step 3: Environmental and social due diligence : screening

As a reminder, the project will be implemented in the region of Gabù and Bafatà. The sites to be developed are not yet definitively retained. In accordance with the texts in force, an Environmental and Social Management Framework (ESMF) is prepared for the project. An Environmental and Social Management Plans (ESMP) will be prepared for each subproject when the sites are definitively retained.

To enable the integration of the environmental and social dimensions in the design and implementation of the sub-projects to be financed by the Adaptation Fund project, it is essential to propose a procedure allowing to assess the impacts and describe at each phase of the sub project environmental measures to be implemented and the actors who will be responsible for their implementation. Indeed, the procedure will be the approach which will allow to determine the level and modalities of consideration of the environmental and social impacts in the cycle of the sub projects. Moreover, the environmental approach proposed, considers the existing environmental management in the administrative procedure of assessment and review of environmental impacts in Guinea Bissau under the environmental and social impact assessment process. The complementaries assessment which will be conducted under this procedure will be guided by the environmental and social principles of the Adaptation Fund.

Environmental and social screening

During the technical review for sites and beneficiairies selection, the Competent Environmental Assessment Authority (AAAC) should note that: (i) according to the criteria for selection of subprojects, any subproject likely create impacts or risks to natural habitats, biodiversity, physical and cultural heritage will not be selected. The AAAC don't need to screen the subproject for those principles; (ii) the principles related to: compliance with the law, access and equity, marginalized and vulnerable groups, human rights, gender equality and empowerment of women, fundamental labour rights and public Health are the common principles triggered for the all subproject. Thus, they are already considered in the sub-project screening in the environmental and social management framework.

At this stage, there will be two groups of subprojects:

<u>Group 1:</u> The subprojects which don't need an E&S complementary assessment. These subprojects:

- a) don't create impacts or risks to natural habitats, biodiversity, physical and cultural heritage according to the criteria for selection of sub-projects;
- b) comply with the common principles triggered for the all subproject, which are: compliance with the law, access and equity, marginalized and vulnerable groups,

human rights, gender equality and empowerment of women, fundamental labour rights and public Health;

c) are already considered in the project screening in the environmental and social management framework.

For these type of subprojects, the AAAC will recommend to actualize the environmental and social management framework plan (ESMFP) to set up a common ESMP during the formulation of the subproject proposals (step 4) and after for the technical review of the sub-project proposals (step 5).

Group 2: The sub-projects which comply with the criteria a.) and b.) above, but which are likely to present any E&S impacts and risks relative to the following principles: pollution prevention and resource efficiency, land and soil conservation. These subprojects will be submitted to a complementary screening. This screening will be done by the AAAC based on the following table during the technical review for subprojects selection.

AF Principles	AF Principles Questions to ask		er	Comments
		Yes	No	
1.Prevention of	1.1. Does the area of the subproject			
pollution and	presents frequent attack of crops by pests			
the	to require the use of large quantities of			
effectiveness	pesticides?			
of the	1.2. Is there a risk of poisoning by			
resources	inhalation or by consumption of water or			
	food contaminated by pesticides in the			
	case of the frequent attack of crops by			
	pests?			
	1.3. Does the Group have the capabilities			
	for rational use of pesticides in the case of			
	the use of large quantities of pesticides?			
2.Land and soil	2.1. Could the sub project contribute to the			
conservation	intensification of soil degradation if it is			
	mismanaged?			
	2.2. Could the activities of the sub projects			
	cause degradation of the quality of water			
	and soil if they are badly managed?			
	2.3. Does the soil of the site very poor to			
	generate important use of fertilizers?			
	2.4. Does the subproject causes the			
	conversion of lands or of productive land			
	that provide valuable ecosystem services?			

Table 18: Subprojects screening indicative

The E&S screening report will be annexed to the subprojects selection report and sent to the Technical review committee.

If the answers are 'no' to all the questions related to the 3 principles of the Adaptation Fund (Pollution prevention and resource efficiency, Lands and soils conservation) in the above table, the subprojects are classified in the **Group 1** above.

If the answers are 'yes' to the questions related to these principles set out in the table above, an environmental and social complementary assessment is required. In this case, the AAAC will recommend to prepare complementary environemantal and social assessment during the formulation of the subproject proposals (step 4) for the technical review of the sub-project proposals (step 5).

Step 4: Formulation of subproject proposals including environnemental and social additional assessment

After the selection of the sites and the beneficiairies, the subprojects proposals will be designed by the selected Consultants by the PMU. It consists of complementary studies of APD, update of the ESMP of the selected sites. At this step, the AAAC will make available to the consultant through the PMU, the environmental screening report of the subprojects to prepare the ESMP or complementary environnemental and social assessment.

Step 5: Subproject proposals technical review

The subproject proposals, including complementary environnemental and social assessment (for Group 1 subprojects) or the ESMP update (for Group 2 subprojects) prepared by the Consultants will be submitted by the Governor to the Technical Review Committee for the final technical review.

At this step, the AAAC will be responsible of the technical review of the complementary environnemental and social assessment reports. The AAAC will ensure the considering of the environmental and social issues related to such subprojects according the E&S principles of the Adaptation Fund.

Technical Review Committee will selected the good subprojects on the basis of the financial, economic, environmental, social and gender criterion.

The technical review committee will ensure the inclusion of marginalized populations, women, youth peoples. In this sense, the criteria for selection of the sub-project will take into account vulnerable and marginalized groups and gender mainstreaming. In the definition of the selection criteria, the project management unit will ensure that at least 50% of the direct beneficiaries of the project are women.

Step 6: The approval of the subprojects

The technical review report of the subprojects proposals will be submitted to the Governor who will send them to the Regional Approval committee for validation in workshop.

The validation of the requests by the approval committee allows project promoters to access funding. All the subproject selected are sent to the PMU for funding.

Step 7: Project funding by the PMU

The subprojects which don't need an E&S complementary assessment and which are considered by the PMU to draft an actualized common ESMP will be financed by the PMU.

Step 8: Implementation of subproject

The subprojects will be implemented as described in the project (III. A).

The implementation of environmental and social measures, supervision and environmental and social monitoring will be conducted as described under item: III.C and III.D.

Launching process, by the PMU, of tender documents of business

This process involves the preparation of Tender Documents and their launching. Given the specificity of equipment, acquisitions and ordering of the installation, work will be done by the PMU in the name and on behalf of farmers. During this stage, the PMU will select, in accordance with the regulations in force in Bissau Guinea, BOAD and Adaptation Fund procedures, companies for the acquisition of equipment, development work and accompanying infrastructure.

IMPLEMENTING ENTITY (BOAD) SPECIALIZED TECHNICAL SERVICES

The implementing entity (BOAD) will give general management support and specialized technical support services to the project. The indicative services provided by the implementation entity (BOAD) are summarized in the table below.

Step	Indicatives services
Identification,	- Provide information on substantive issues in adaptation
Sourcing and	associated with the purpose of the Adaptation Fund (AF).
Screening of ideas	 Engage in upstream policy dialogue related to a potential
	application to the AF.
	- Verify soundness and potential eligibility of identified idea for AF.
Feasibility	 Provide up-front guidance on converting general idea into a
Assessment / Due	feasible project;
Diligence Review	- Source technical expertise in line with the scope of the project;
U U U U U U U U U U U U U U U U U U U	- Verify technical reports and project conceptualization;
	- Provide detailed screening against technical, financial social and
	risk criteria and provide statement of likely eligibility against AF
	requirements;
	- Determination of execution modality and local capacity
	assessment of the national executing entity;
	- Assist in identifying technical partners;
	- Validate partner technical abilities;
	- Obtain clearances from AF.
Development &	- Provide technical support, backstopping and troubleshooting to
Preparation of sub-	convert the idea into a technically feasible and operationally viable
project	project;
	- Source technical expertise in line with the scope of the Project
	needs;
	- Verify technical reports and project conceptualization;
	- Verify technical soundness, quality of preparation, and match with
	AF expectations;
	 Negotiate and obtain clearances by AF;
	- Respond to information requests, arrange revisions;
	- etc.
Implementation of	- Technical support in preparing TORs and verifying expertise for
the project	technical positions;
	- Provide technical and operational guidance project teams;
	- Verification of technical validity / match with AF expectations of
	inception report;
	- Provide technical information as needed to facilitate
	implementation of the project activities;
	 Provide advisory services as required;
	- Provide technical support, participation as necessary during
	project activities;
	 Provide troubleshooting support if needed;
	 Provide support and oversight missions as necessary;
	- Receipt, allocation and reporting to the AF of financial resources

Table 19: indicative technical services of the implementation entity

Step	Indicatives services
	 Allocate and monitor Annual Spending Limits based on agreed work plans; Oversight and monitoring of AF funds; Return unspent funds to AF.
Project evaluation and reporting	 Provide technical support in preparing TOR and verify expertise for technical positions involving evaluation and reporting; Conduct the evaluation field missions; Participate in briefing / debriefing; Verify technical validity / match with AF expectations of all evaluation and other reports; Undertake technical analysis, validate results, and compile lessons; Disseminate technical findings.
Project monitoring and reporting	 Provide technical support in preparing TOR and verify expertise for technical positions involving in the and reporting; Provide technical monitoring, progress monitoring, validation and quality assurance; Conducted field monitoring missions; Verify the implementation of adptative actions Verify the concrete implementation of the ESMPs and recommend specific corrective actions to ensure that the project complies with the E & S principles of the Adaptation Fund; Submit periodic reports on the implementation of ESMPs to the Adaptation Fund in accordance with the schedule agreed by both parties.

STAKEHOLDERS AND THEIR ROLES

The table below shows the roles of various entities by project component

Table 20: Roles of key stakeholders

Products	Publicinstitutions(ministriesandtechnicalservicestechnicalservicesfenvironment,Agriculture,Livestock,Water,Forestry,Civilprotection,NataionalLaborator)	Local organizations (umbrella, cooperatives)	Private technical support structures	Project Managemen t Unit	Implement ation entity
Component 1: Development of tea climate risk with the ad Outcome 1.1. Technical capacity of gove needs in extremely vulnerable 1.1.1 Socio-climatic vulnerability assessment for East Guinea-Bissau	daptation practices and ernment and field workers	d planning to assess impacts, vulr	Provide expertise for the capacity building of the local	Coordinate support among stakeholde rs, manage funds; ensure the proper	The implementi ng entity (BOAD) will give general manageme nt support and
			development services agents of Ministry of Agriculture on climate change and its impacts on food security	conduct of procureme nts of goods and services markets,	specialized technical support services to the project. The
1.1.2 Assessment of technical capacity building needs of ministries and field operatives for adaptation planning	Participate in the organization of training for its own staff		Provide the necessary expertise for the training of technical staff on natural resource monitoring tools	develop activity reports, Ensure effective monitoring	indicative services provided by the implement ation entity

 1.1.3 Formulation of detailed intervention plan for pilot climate-smart agriculture actions and policies, procedures and guidelines related to climate change, gender and natural resources Outcome 1.2 Farmers groups, private p integrated knowledge on climate-smart adaptation planning 				and evaluation of project activities. Coordinate support among	(BOAD) are relative to: (i) Identificati on, Sourcing and
1.2.1 Technical trainings on adaptative systems and organizational capacity building for identified target groups	Provide support for sensitization and training of communities	Provide support for the mobilization and sensitization of communities	Provide the necessary expertise	stakeholde rs, manage funds; ensure the	Screening of Ideas; (ii) Feasibility Assessme
1.2.2 Technical assistance and rural extension for subprojects	Provide technical support	Mobilize and organize the famers		proper conduct of procureme	nt / Due Diligence Review;
1.2.3 Formulation/Update of contingency plans for climate-risk management	Provide support for training of farmers	Mobilize and organize the famers	Provide the necessary expertise for the developpement of the	nts of goods and services markets,	(iii) Developm ent & Preparatio
1.2.4 Support for famers groups by the government technical experts for adaptation actions implementation	Provide technical support	Mobilize and organize the famers	Provide the necessary assistance, if need	develop activity reports,	n of sub- project; (iv) Implement
1.2.5 Capacity building to prevent forest fires	Provide technical support			Ensure effective monitoring	ation of the project; (v) Evaluation
Component 2: Enhance the resilient control	ce of existing agricultu	Iral productive syste	ems, including water	and evaluation	and Reporting.
Outcome 2.1 Agricultural and livestock productivity and enhance nation		rt and contribute to su	ustainable increases in	of project activities	
2.1.1 Development of lowlands to maintain agricultural production in drought periods	Provide support for identification of the sites	Mobilization of the population especially local workforce	Provide necessary expertise for the study and the construction of small- scale irrigation system	Etc.	

2.1.2 Construction of micro-dams for irrigation of rice, vegetable crops and livestock water supply	Provide support for identification of the sites	Mobilization of the population especially local workforce	Provide necessary expertise for the study and the construction of mini- water retention for irrigation	
2.1.3 Rehabilitation/improvement of soil and pasture productivity and small-scale investments into agriculture inputs, machinery and tools	Provide sensibilisation and technical support			Coordinate support
2.1.4 Construction of drills/wells and ramps for improved livestock and domestic water supply and market gardens development	Provide support for identification of the sites	Mobilization of the population especially local workforce	Provide expertise necessary	among stakeholde rs, manage
Componet 3: Knowledge manager adaptation planning Outcome 3.1 Sustainable climate-smart regions of the country and ot	agriculture practices and	d management is disse		funds; ensure the proper conduct of
Output 3.1.1. Knowledge management strategy developed			Provide expertise if necessary	procureme nts of goods and services markets, develop
Output 3.1.2. Development and animation of the project website	Making available data, lessons learned and other information on the project for publication on the project website.	Provide support to the collection and processing of data on the project	Provide support to the collection and processing of data on the project, if necessary	activity reports, Ensure effective monitoring and
Output 3.1.3. Manual and other materials on best practices and measures for climate-smart agriculture are developed	Provide necessary expertise	Provide support for the dissemination of information within communities on the best adaptation pratices	Provide exper	evaluation of project activities Etc.

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B. Describe the financial risks' management measures and risks of project /program.

The following table summarizes the key project risks.

Table 21: Project risk

Category of risk	Risks	Description
Political	Government political instability and frequent political post shifts high in government may hinder the project implementation	During this quinquennium, Guinea-Bissau experienced several governments with changes of posts and attributions of ministries due to instability prevails. Changes are continuing and may result in changes to the responsibilities of departments, management and technical services. This can undermine the implementation of the project if this climate of instability persists. empowerment and advocacy at the highest ministerial levels on climate change may be lost due to ministerial changes. The impact at the effective project roll-out levels is much less, but lack of ministerial support will mean that progress is slowed in terms of policy and action change.
	Political resistance/inertia to adjust 'governance frameworks' (i.e. policies, plans, strategies, programmes etc.).	Often when a policy, plan or strategy is prepared and validated it is generally considered 'final'. There is reluctance to treat it as a dynamic document, which may be subject to adjustments. This applies in particular to the plans and strategies which are time bound and the programmes that involve external funding. There may be inertia over any policy change additionally, in under-resourced, low capacity government departments
	Policymakers or politicians prioritize economic benefits over social and environmental needs	Politicians can want that some project activities such as the fight against forest fires, capacities building, contribute to the development of the economic activities of the country.

Category of risk	Risks	Description
Strategical	Reluctance to apply the knowledge and practices for adaptation to climate change Cultural barriers in accepting new techniques can be expected	Cultural practices in Guinea-Bissau are important. In many families and communities there are complex reasons for existing practices, and new techniques may be unpopular because they require a fundamental change to customs and practices, even if they do increase yields, income and/or livelihoods security. In addition, it is frequently easier, and outcomes are more predictable, to keep with existing livelihood strategies, even if these are not as successful as they might be. If new farming techniques and livelihood opportunities are tailored to the local reality – or, better still- existing techniques only slightly changed and improved, with demonstrated success and strong elements of community-level partnership and NGO support, technique uptake will be increased and more rapid. The project needs to monitor this carefully with in depth social household surveys on practices and behavioural change.
	Overlap of interventions of public institutions	The project covers various aspects including environmental, agriculture, livestock, water, forests, etc. These aspects are the attributions of several departments/ministries. If the responsibilities are not clearly defined, there is a risk of overlap of interventions of the departments.
Institutional	Weak participation and involvement of public services at regional level	It may happen that local public technical services that are supposed to provide support to producers in the conduct of agricultural activities are loosely involved. This risk can exist with constantly positions changes.
	Lack of support from local administrative authorities (Gouvernors of region, Administrators of sectors, etc.)	If the local administrative authorities are not involved at the stage of identification and planning of the project, they will not give their support in the implementation of the project.
Technical	The low capacity of stakeholders to implement the project activities	The project envisages promoting resilient to climate change activities that were not practiced by the producers. They won't have capabilities necessary to implement these activities. Which may adversely affect the expected results of the project.
	The technical practices promoted by the project are confined to the first beneficiaries	There is risk that promoted practices are confined only to the intervention area of the project if the dissemination of practices through the replication of the project is not planned.
Financial	Bad financial governance and corrupt practices may lead to	Guinea Bissau is the 158 least corrupt nation out of 175 countries, according to the 2015 Corruption Perceptions

Category of risk	Risks	Description
	less funds invested in desired outcomes than planned	Index reported by Transparency International ¹¹ . Where transparency and accountability mechanisms are weak or lacking, public financial management and development outcomes suffer as a result".
Climatic	New facets of climate risks emerge during the life of the project	The flooding, the drought and climate disturbances could be increased during the life of the project.
Environment al ¹²	Exclusive focus on climate change may distract from wider environmental and poverty issues	Dealing with the risks of climate change may lead to less focus on other corollary environmental issues that are perhaps more important in the short term, such as loss of biodiversity.
	Weak integration of environmental issues and gender in the implementation of the project by the producers	Producers could unsufficiently observe environmental and social measures prescribed under the project by mistakes from lack of knowledge of their interest.
Management	Faillure in coordination of the project	The study on the lessons learned of the LDCF project noted some shortcomings in the cordination of the project. If arrangements are not made, this risk can occur in the context of the present project.
	Faillure in communication of the project	The project covers several villages with different dialects. If an effective program of communication is not established, this mission can be reveal a failure under the project implementation.
	Failure in monitoring of activities due to conflict of interest between stakeholders	Several institutions will be involved in the monitoring of the activities of the project. If the role of each actors isn't defined through clear memorandum between the project and technical institutions, a conflict of interest may arise in the monitoring of the project.
	Lack of infrastructure monitoring that would be degraded or abandoned as soon as the project is completed	If the selected beneficiaries do not sufficiently involved in the project, infrastructure established can be dropped or will degrade quickly just after the close of the project.

The risks identified above were evaluated according to their probability of occurrence. Evaluation indicators are presented in the table below.

 ¹¹ www.tradingeconomics.com/guinea-bissau/corruption-rank
 ¹² Other environmental and social risks are taken into account under item K, PART II and Item C, PART III.

Table 22: Risk indicators

	Impact								
		CRITICAL	Нідн	MEDIUM	Low	NEGLIGIBLE			
	Certain / Imminent	Critical	Critical	High	Medium	Low			
pood	VERY LIKELY	Critical	High	High	Medium	Low			
kelih	LIKELY	High	High	Medium	Low	Negligible			
5	MODERATELY LIKELY	Medium	Medium	Low	Low	Negligible			
	UNLIKELY	Low	Low	Negligible	Negligible	Considered to pose no determinable risk			

These indicators are used to assess and characterize the different risks of the project to provide mitigation measures (see table below).

Table 23: Project Risks Assessment and Mitigation Measures

Category	Risks	Impact	likelihood	Risks assessment	Mitigation measures
Political	Government political instability and frequent political post shifts high in government may hinder the project implementation	High	Moderately likely	Medium	Although this risk is outside the jurisdiction of the project, it is deemed a low risk based on experiences made in other projects during times of political instability. In the past, the Government of Guinea-Bissau has shown strong commitment to carry out projects even under political instability Strong support for the policy changes in key ministries will be generated at the Directorate General level, which have been relatively stable in staffing despite political changes.
	Political resistance/inertia to adjust 'governance frameworks' (i.e. policies, plans, strategies, programmes etc.).	Medium	Likely	Medium	In the framework of the project, an policy expert will be contracted to draft and implement the policies, procedures and guidelines. It is recommanded that this expert have already a good level and relations in the national administration. The strong interaction with the national institutions and local stakeholders and their institutions will help to avoid this risk.
	Policymakers or politicians prioritize economic benefits over social and environmental needs	Medium	Moderately likely	Low	Project activities explicitly integrate social, environmental and economic development needs in an integrative framework of climate-resilient agriculture. The project will prioritize low-regrets strategies for resiliency that have proven impact also on farmer income.
Strategic	Reluctance to apply the knowledge and practices for adaptation to climate change Cultural barriers in accepting new techniques can be expected.	Medium	Likely	Medium	Strong interaction with local stakeholders and their institutions (e.g. RCCF) with regard to project activities is to reduce reluctance further. Awareness raising and training programs will be developed by the project under team under coordination of the PMU.

Category	Risks	Impact	likelihood	Risks assessment	Mitigation measures
					During the prepration of the project, beneficiaries have been widely consulted and have expressed their strong support for the project. The project provided outreach to beneficiaries. An information, exchanges and communication plan for a full participation of stakeholders will be established in the first year of the project. The project will work in collaboration with community organizations, local NGOS already on
					the ground in a strategic partnership framework. This will allow to overcome cultural barriers. The communication and awareness strategy of the project will consider this. A strategic plan for knowledge dissemination will be formulated and the communication will be made in local languages.
	Overlap of interventions of public institutions	Medium	Moderately likely	Low	Clear memorandum of intervention between the project and the diffrents institution involved in project implementation will take care of this.
	Weak participation and involvement of public services at regional level	Medium	Moderately likely	Low	The RCCF meetings will take place every 3 months. These meetings will include government and civil society members.
Institutional	Lack of support from local administrative authorities (Gouvernors of region, Administrators of sectors, etc.)	Medium	Moderately likely	Low	Local administrative authorities are involved in the project design phase through meetings and during public consultation workshop in each region and sectors in project area. The Full Project, the ESMF and other documents of the project was validated trough workshops with the effective presence of the Governor of Gabu, the representative of the Governor of Bafatá, all Administrators of sectors or their representatives.

Category	Risks	Impact	likelihood	Risks assessment	Mitigation measures
Technical	The low capacity of stakeholders to implement the project activities	Medium	likely	Medium	The activities of capacity building of stakeholders under the component 1 will help to overcome this obstacle
	The technical practices promoted by the project are confined to the first beneficiaries	Low	Moderately likely	Low	The project plans a strong component 3 on dissemination of lessons learned. For more impact of climate-smart activities, it is recommended the replication of the project in the other regions of the country.
Financial	Bad financial governance and corrupt practices may lead to less funds invested in desired outcomes than planned	Medium	likely	Medium	Strong relationships with the overseeing government department MESD and financial oversight by BOAD with frequent, regular monitoring visits and audits will keep projects on line in terms of delivery and expenditure. Financial management procedures will be established and the coordination of the project will be trained on fiduciary standards.
Climatic	New facets of climate risks emerge during the life of the project	Medium	likely	Medium	The project will work with systems for crisis prevention coordinated by the government, the meteorology services, INPA and the climate change local and national comitees. The project will train the different actors (mentoring technical services and farmers) to better understand and follow the predictions of climate changes to prevent / anticipate crises.
Environmental ¹³	Exclusive focus on climate change may distract from wider environmental and poverty issues	Medium	Unlikely	Negligeable	The project is designed alongside existing poverty reduction and environmental strategies in order to complement existing measures. An integrated

¹³ Other environmental and social risks are taken into account under Item C, PART III.

Category	Risks	Impact	likelihood	Risks assessment	Mitigation measures
					approach to agriculture, livestock, water and forest is designed to minimise this issue. The project as planned will help to reduce food insecurity and poverty of the beneficiaries.
	Low integrategration of environmental and gender issues in the implementation of the project by the producers	Medium	likely	Medium	On the base of the Environment and social safeguards and gender policies of BOAD and Adaptation Fund, an environmental and social management framework (ESMF) is prepared for a better integration of environmental and social issues within the project. The ESMF will be translated into specific Environmental and Social Management Plans for each intervention site. Periodic monitoring will be conducted by the competent services to ensure the effective implementation of the measures. Training and awareness activities are programmed to allow sufficient taking into account of environmental, social and gender issues in the implementation of activities on the sites.
Operational/Management	project	Medium	Likely	Medium	One of the first activities after the establishment of the PMU is the development of a manual of procedures of the project to strengthen the management capacities of the PMU team. Establish a project consultative platform for sharing information and know-how among stakeholders, and promote frequent in person meetings. At national level inter-ministerial meetings will be held
	Faillure in project communication	Medium	likely	Medium	An effective communication program is established taking into account the lessons learned from the LDCF project. The capacities of the communication coordination team will be strengthened.

Category	Risks	Impact	likelihood	Risks assessment	Mitigation measures
					Communications expert will be supported by local community organizations and local radio in advocacy.
					The manuals of good practices will be designed in the form of pamphlets and translated into local languages, according to the village, for a greater ownership of the shares.
	Failure in monitoring of activities due to conflict of interest between stakeholders	Medium	Moderately likely	Low	Des memorandum liant le projet et les autres acteurs impliqués dans le suivi devront être clairement établis. Memorandum between the project and other actors involved in the monitoring will be clearly established.
	Lack of infrastructure monitoring that would be degraded or abandoned as soon as the project is completed	Medium	likely	Medium	Monitoring of the achievements of the project will be integrated in the program of activities and budgets of the related Directorates in the fourth year of the project.

A continuous risk assessment system will be implemented. Risks will be presented annually in the PIR (Program Implementation Report) through a risk assessment matrix, including possible (alternative) mitigation actions. In tri-semester reports risk evaluation matrix will be incorporated, according to type (poltitical, strategical, institutional, financial, operational, environnemental, climatic), level (low, medium, critical), type of response (emergency actions, change in plans, other) and evolution of risks (stable, declining, increasing, etc.), and date of risk; also using the annual project report to give a more complete picture on risks and their development

C. Describe the management measures of environmental and social risks, in line with the environmental and social policy of the Adaptation Fund.

To screen and assess social and environmental risks, as well as to mitigate potentially adverse impacts, a specific, measurable and time-bound set of indicators reflecting these risks is integrated in the outputs of the project. In general, failure in compliance with the Adaptation Fund's Environmental and Social Policy is believed to be a low risk given that the project focuses strongly on increasing resilience of social and environmental systems in the Project Region.

The following table describes the management of risks and impacts of the project in accordance with the Environmental and Social Principles of the Adaptation Fund.

BOAD, as an implementing entity, will oversee the supervision and monitoring of the Environmental and social measures as well as those relating to gender. For example, BOAD will include in the monitoring and evaluation of the project, a monitoring and evaluation report that assess the implementation of the Environmental and social measures of the project. The PMU will submit to the BOAD, every six (06) months, specific reports on the implementation of ESMPs. The BOAD will organize at least one to two field missions per year to verify the level of implementation of the ESMPs and recommend specific corrective actions that ensure that the project complies with the E&S principles of the Adaptation Fund. In the event of a grievance, the Environmental, social and legal services of the BOAD will submit, to the Adaptation Fund, periodic reports on the Implementation of ESMPs in accordance with the timetable agreed by both parties.

Table 24: Environmental and social impact/risks of project and mitigation measures

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
				Preparation phase					
Compliance with the Law		Low integration of environmental and social issues in the implementation of the project	Prepare site-specific ESMP with realistic measures	Number of sites for which Environmental and Social Management Plans (ESMP) have been prepared Relevance of ESMP	PMU	During the preparation of the technical documents of the project	AAAC ¹⁴	General Directorate of Environme nt (GDE)	Take into account in outputs 2.1.1. and 2.1.2.
Access and equity		Risk of non- access of project resources by	Put in place transparent criteria to permanently retain the sites to be	Level of application of fair criteria for the selection of participants in training sessions organized	PMU				PM
		one layer of the population	developed and the beneficiaries	Effectiveness of the project communication system	PMU	During the final selection	AAAC	GDE	F IVI
			Consider women, the elderly and young people in the final selection of beneficiary groups	Percentage of women, elderly and young people who received training	PMU	of sites	AAAC G		
Vulnerable and marginalize d groups		Risk of non- profitability of vulnerable and marginalized groups to the effects of the project	Taking vulnerable and marginalized groups into account in the implementation	Percentage of young people and women beneficiaries of the project	PMU	Semi annual	AAAC	GDE	PM

¹⁴ Competent Environmental Assessment Authority

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
Gender Equality and the Empowerm ent of Women		Risk of non- integration of gender (men, women, young people, the elderly) in the implementation of the project	Taking gender into account in establishing beneficiary selection criteria	Number of women and young people receiving technical and financial support for the development of irrigated areas	PMU	Semi annual	AAAC	GDE	PM
Climate change	Increased capacity of stakeholder s for the developme nt and implementa tion of resilient approache s to Climate Change		Ensure the effective and efficient participation of women and youth in the various capacity building workshops through project facilitation activities	Number of women and young people able to assimilate the best approaches and practices taught and to pass on the knowledge gained to the other members of the group	PMU	Before the start of the fields activities	AAAC	GDE	PM
				Construction phase			1		
Compliance with the Law		Risk of poor implementation of environmental and social	Integrate the environmental and social clauses of the BDs into the work execution contracts	Level of implementation of environmental and social measures by enterprises	PMU	During infrastructures construction	AAAC	GDE	5 000
		clauses by companies		Number of E & S monitoring missions and follow-up report	PMU	During infrastructures construction	AAAC	DGE	
Fundament al labor rights	Job creation		Promoting the use of local labor in the construction of structures	Proportion of local labor used in installation work	PMU	During construction	AAAC	GDE	PM

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
		Risk of injury to workers' health and safety	Require that each company awarded an infrastructure contract prepares and effectively implements an internal operating plan	Number of work accidents due to non-compliance with recommended measures	PMU	During construction	AAAC	DSP	
			Require appropriate protective equipment to personal and ensure effective wear	Proportion of workers wearing personal protective equipment	PMU	During construction	AAAC	GDE Public health directorate (PHD)	РМ
		Risk of child labor outside the limits set by the Law	Sensitize entreprises on the disadvantages associated with the employment of children in difficult and risky tasks, including their health and development	Proportion of workers sensitized. Number of reported cases of employment of children in difficult tasks.	PMU	During construction	AAAC	DGE Work Directorate (WD)	
			Inform entreprises on the Labor Code	Number of campaigns organized. Proportion of workers informed and observing the provisions of the Labor Code	PMU	During construction	AAAC	GDE	
			Conduct monitoring of indicators	Number of monitoring mission conducted	PMU	During construction	AAAC	DGE Work Directorate (WD)	5 000
Vulnerable and marginalized groups.	Improved access to water for irrigation by all		Dimension the water mobilization infrastructures to cover all the plots	Coverage rate of the irrigation network Number of complaints	PMU	During the construction of the structures	AAAC	GDE Generale Directorate of	PM

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
Gender equality and empowerme nt of women								Agriculture (GDA) General Directorate of Water (GDW)	
				Operation phase					
Compliance with the Law		Producers' low capacity to implement environmental and social measures in	Organize periodic sensitization campaigns on the national provisions and the E&S principles of the AF	Number of sensitization campaigns organized for producers	PMU	At the start of project implementatio n	AAAC	GDE	Take into
		accordance with national legislation and the principles of the Adaptation Fund	Ensure the effective implementation of the measures proposed by the environmental and social management plans	Level of implementation of Proposed Mitigation Measures on Site ESMPs	PMU	During the implementatio n of the project	AAAC	GDE	account in the ouput 1.2.4
			Conduct periodic monitoring missions	Number of E & S monitoring missions and report	PMU	During the implementatio n of the project (Once a year)	AAAC	GDE General Directorate of Agriculture (GDA)	10 000
Human rights		Risks of uncontrolled treatment and unequal treatment of cases of poisoning	Strengthen the intervention capacities of the health centers of the sectors of intervention for an effective and	Level of improvement of the capacity of the health center of the municipality for an efficient and equitable treatment of the cases.	PMU	At the beginning of the project	AAAC	Directorate of plants protection (DPP) DSP ¹⁵	10 000

¹⁵ Directorate of Public Health

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
			equitable treatment of the cases of poisoning	Number of complaints cases					
Fundament al labor rights	Relieving child labor and saving time due the availability of domestic water supply		Avoid the use of children during the week of classes Ensuring effective schooling for children	School development of the children of the members of the group. Number of complaints related to the employment of children during the week.	PMU	During operation	AAAC	DPE ¹⁶ GDE	PM
		Risk to health and safety of workers	Raise awareness of workplace hazards	Number of outreach meetings Proportion of sensitized producers Number of workplace accidents related to non- compliance	PMU	During the first two years	AAAC	DSP DiP ¹⁷	PM
			Require producers to wear appropriate protective equipments	Proportion of producers wearing appropriate protective equipment	PMU	During the implementatio n of the project	AAAC	GDE GDA	
			Designate one or two heads of hygiene- health-environment by production site	Presence of one or two agents whose responsibility is to ensure hygiene, health and environment on each site	PMU	At the start of operations	AAAC	GDA DSP GDE	PM
			Strengthen producers' capacity to use pesticides	Proportion of producers trained and practicing recommended measures for pesticide management	PMU	Annually	AAAC	DPP	PM

Child Protection Division

¹⁷ Directorate of Labor

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
			Conduct missions of indicators monitoring	Number of missions conducted	PMU	During the implementatio n of the project	AAC	GDE GDA	5 000
		Risk of child labor outside the limits set by the Law	Sensitize farmers on the disadvantages associated with the employment of children in difficult and risky tasks, including their health and development	Proportion of producers of the sensitized group. Number of reported cases of employment of children in difficult tasks.	PMU	Annually	AAAC	GDA	PM
			Inform farmers on the Labor Code	Number of campaigns organized. Proportion of producers informed and observing the provisions of the Labor Code	PMU	At the start of operations	AAAC	GDE GDA	
Acces and equity Vulnerable and marginalized groups	Improving women's incomes and developme nt		Encourage the effective and efficient participation of women, young people and the elderly in project activities	Degree of involvement of womenProportion of women who have seen improvements in their living conditions	PMU	During operation	AAAC	GDE GDA	PM
Gender equality and empowerme nt of women	Improved access to quality inputs by all		Ensure equitable support for the acquisition of quality agricultural inputs	Number of cases of complaints related to the acquisition of agricultural inputs	PMU	During installation	AAAC	GDA	PM
Protection of natural habitats		Destruction of vegetation and wildlife habitat	Promote the system of agroforestry and planting trees with nutritional or medicinal value	Level of integration of the agroforestry system in agricultural practices. Reforested area with nutritional and medicinal trees.	PMU	Bi-annually	AAAC	DGF	PM

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
Conservati on of biological diversity	Landscape improveme nt		The sites will be protected against silting with local species and if possible, with endangered species	Types of species used for agroforestry purposes	PMU	During operation	AAAC	DPP	РМ
Pollution Prevention and Efficient Resource	Sustainabl e manageme nt of water resources		Design structures for the rational management of water and their maintenance	Level of performance of structures in terms of water conservation	PMU	During construction and during operation	AAAC	GDA	
Manageme nt		Contamination of Soils and Water by Pollutants	Strengthenthecapacityoftheproducersonthepesticideandfertilizersmanagement system	Number of sessions organized to build the capcity of the producers on fertlizers and pesticides management	PMU	During the implementatio n of the project	AAAC	DPP	Take into account in the output 1.2.4
			Support to the obsolete pesticides and packaging management	Number of pesticide management and monitoring by plant protection officers	PMU	During the implementatio n of the project	AAAC	DPP	And 10 000 for monitoring
				Level of rational management of obsolete pesticides and packages on construction sites	PMU	During operation	AAAC	DPP	Tor monitoring
				Quantity of obsolete pesticides and contaminated packaging destroyed	PMU	During operation	AAAC	DPP	
			Support for acquistion of the soil and water analysis equipment	Quality of water and soil quality analysis equipment	PMU	Before operation phase	AAAC	National Laboratory	70 000
			Analysis and monitoring of soil and water quality	Numbre of water and soil quality analysis conduct	PMU	During operation	AAAC	National Laboratory	24 000

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
Public health		Risk of poisoning by inhalation or by	Strengthening Producers' Capacity to Manage	Number of training sessions on the rational use of pesticides	PMU	At the start of operations	AAAC	DPP	
		consumption of water or food contaminated with pesticides	PesticidesinAccordancewithPesticidesUsingStandards	Number of producers educated about the use of pesticides	PMU	During operation	AAAC	DPP	
		or fertilizers	Rational management of pesticides by farmers and individual	Percentage of beneficiaries to wear appropriate protective equipment when applying pesticides	PMU	During operation	AAAC	DPP	Take into
			protection	Percentage of beneficiaries implementing good pesticide storage and use practices	PMU	During operation	AAAC	DPP	account in the output 1.2.4
				Number of cases of pesticide poisoning	PMU	During operation	AAAC	DPP	And
			Establish a collection system for empty pesticide and obsolete packaging	Proportion of contaminated packaging collected (compare to quantities used) and transported for destruction	PMU/ Producers	During operation	AAAC	DPP	10 000 for monitoring
			Sensitize producers on hygiene measures during and after operations	Level of application of hygiene measures at the project site	PMU	During operation	AAAC	DPP	
		Risk of development of waterborne diseases	Informing and sensitizing farmers on diseases related to the presence of water	Number of awareness sessions for health services in the project area to enable them to take into account all new cases of waterborne diseases Evolution of the number of cases of water-borne diseases (malaria,	PMU	During operation	AAAC	MS	Take into account under ouputs 1.2.4 and 2.1.5

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
				bilharziasis, diarrhea, schistosomiasis, etc.)					
Public health	Improving the nutritional status of children and supporting Food Safety		The crop varieties with nutritional value to support food security and improve child nutrition are promoted in the project	Evolution of the nutritional status of children in municipalities of intervention Evolution of diseases linked to child malnutrition intervention sectors Evolution of the rate of food insecurity in the intervention sectors	PMU	During the implementatio n of the project	AAAC	GDE	Take into account under item 1.2.3. (c)
Cultural and physical heritage		Risk of destruction of physical and cultural heritage	Establishment of a system of recovery of fortuitous discoveries of physical heritage	Number of fortuitous discoveries of cultural heritage notified by producers on building sites	PMU	During the implementatio n of the project	AAAC	DPC ¹⁸	5.000
C		during fortuitous discoveries		Percentage of cases of fortuitous discoveries of cultural and physical heritage taken over by the competent institutions	PMU	During the implementatio n of the project	AAAC	DPC	- 5000
Land and soil conservatio		Soil and Land Degradation	Develop sustainable land and soil management	Land actually cultivated with modern techniques of water and soil conservation	PMU	During operation	AAAC	DPC	Take into account in the
n			practices	Rate of increase in agricultural yields on sites	PMU	During operation	AAAC	GDA	output 2.1.3

¹⁸ Directorate of Cultural Heritage

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
				Number of producers who have adopted soil improvement practices	PMU	During operation	AAAC	GDA	
				Proportion of use of organic fertilizer	PMU	During operation	AAAC	GDA	
				Volume of inputs consumed (pesticides, herbicides, fertilizers)	PMU	During operation	AAAC	GDA	
			Support for the acqisition of soil analysis equipment	Quality of water and soil quality analysis equipment	PMU	Before operation phase	AAAC	National Laboratory	See Pollution Prevention
			Analysis and monitoring of soil quality	Numbre of water and soil quality analysis conduct	PMU	During operation	AAAC	National Laboratory	and Efficient Resource Manageme nt
				End of project phase					
-		Risk of abandonment of works	Make sure of the retrocession of works to communities to ensure continuous maintenance and their use for agricultural purposes	Proportion of functional works	SEAT	At the end of the project	AAAC	GDA	PM
Public health		Risk of poisoning by leftover pesticides and contaminated packaging	Collect and destroy obsolete pesticides and contaminated packaging under conditions prescribed by national regulations	Percentage of obsolete pesticide and contaminated packaging collected and destroyed at the end of the project	SEAT	At the end of the project	AAC	GDA	PM

E & S Principles of the Adaptation Fund	Positive impact	Negative impact / risks	Mitigation and enhancement measures	Monitoring indicators	Responsible for implementat ion	Period	Respons ible for monitori ng	Technical support institution	Cost (X USD)
			Collect pesticides in good condition under conditions prescribed by national regulations and offer them to agricultural groups for the treatment of crops	Percentage of pesticides in good condition collected and reused in accordance with national regulations	SEAT	At the end of the project	AAC	DPP GDA	PM
			Support for acquistion of the soil and water analysis equipment	Quality and soil quality analysis equipment	PMU	Before operation phase	AAAC	National Laboratory	See Pollution Prevention and
			Analysis and monitoring of soil and water quality	Numbre of soil quality analysis conduct	PMU	During operation	AAAC	National Laboratory	Efficient Resource Manageme n

The cost of monitoring of an Environmental and Social Management Framework Plan is estimated at 144 000 USD (confer item 2.1.5.2. of the budget)

Grievance mechanism in the framework of the project

In the line of GEF grievance mechanism, BAOD has a policy and grievance procedures manual. This manual defines the complaint resolution mechanism in the implementation of any project financed by BOAD. It aims to establish an effective dialogue between those affected by the projects it finances and all interested parties, to resolve the problem or problems at the origin of a request, without seeking to assign responsibility or fault to any of these parties. The objective of the grievance mechanism is to ensure a fair and effective operationalization process, available at the project, country or the client company. Affected communities and other stakeholders which will be affected by the project can submit complaints to the Bank by mail, email, fax or phone. The procedures to resolve a grievance in the framework of the project is described in the appendix 5.

D. Describe the arrangements made for monitoring and evaluation (M & E), including the plan budgeted for monitoring and evaluation.

Monitoring and Evaluation (M&E) of all project activities, including environmental and social consequences, are part of the project management responsibilities of the Ministry of Environment and Sustainable Development (MESD). These M&E activities will be supervised by BOAD the emplementing entity. This includes tracking the implementation progress and learning in terms of social and environmental concerns, feedback, and knowledge sharing on results and lessons among the primary stakeholders. The Project Management Unit (PMU) and participating Ministries/technical agencies have built proven capacities in conducting inclusive and consultative processes (e.g. through in the development of Guinea-Bissau's First National Communication on Climate Change and the country's NAPA) which will be essential to mitigate any possible social or environmental risks. Participating farmers and their institutions (RCCF, women's associations, NGOs, etc.) will be key stakeholders in these processes. To screen and assess social and environmental risks, as well as to mitigate potentially adverse impacts, a specific, measurable and time-bound set of indicators reflecting these risks will be integrated in the results framework of the project (to be developed in stage two of this proposal). In general, failure in compliance with the Adaptation Fund's Environmental and Social Policy is believed to be a low risk given that the project focuses strongly on increasing resilience of social and environmental systems in the Project Region.

A monitoring and evaluation of project activities will be set up to assess progress regarding the objectives and outcomes outlined in the project document. It will allow to identify strengths and weaknesses in order to make informed decisions and in time. Monitoring will focus on the implementation of project activities and will be based on the measurement of progress at each critical stage of the process. A first level of monitoring is entrusted to technical project steering committee made up of several actors (State and Non-state involved in the project). At the level of each region of intervention, the regional commission of sustainable development will be the monitoring relay to ensure the smooth running of the project activities. Periodically, the Department of Planning of the Ministry of Agriculture will conduct monitoring and evaluation missions and, produce reports on the level of implementation of the recommendations of the Technical Steering Committee. One of monitoring tools will be the work and annual expenditures plan which will be validated by the technical steering committee.

The system of M & E of the program will be built around the logical framework as a tool for management, planning and assistance in decision making for all implementing partners.

Several participatory tools will be used to measure project performance. Additional effect/impacts surveys (start, mid-term and completion) and analysis of technical, annual economic and financial performance of farms will measure the project's impact for groups targets (improvement of yields, reduction of their poverty and improvement of their resilience). A computerized database will be developed for the project.

Quantitative targets will be approved by the stakeholders at the start of the project when reviewing the logical framework taking into account the intervention sites. A midterm review

and a final evaluation are planned in order to assess the changes observed at baseline¹⁹. The M & E system will support decision-making for the adoption of actions or activities of resilience for future projects.

The M & E tools will be developed based on existing operational arrangements and the level of ongoing projects (survey sheet, further investigation to assess the effects/impact, monitoring sheets of activities, thematic studies, nominative targeting system, agronomic monitoring system, environmental and social impact, dashboards).

A synergy will be developed between the present project and projects/programs in the regions of Bafatà and Gabù.

The implementing partners are: i) for operational monitoring, the technical services of the ministries involved (environment, agriculture, livestock, rural engineering, hydraulics and rural code); ii) for the dissemination of information on the environment and climate change, NGOs and consulting-services groups (GSC). A regional technical assistance will occur, from time to time, to strengthen quality control.

The monitoring and evaluation will be done through:

- Balance sheet and programming meetings with grassroots actors;
- Weekly Points, monthly, quarterly and annual reviews at the project team level;
- Field visits.

Monitoring and evaluation of the progress made in the implementation of the results of the project will be based on objectives and indicators established in the context of the results framework of the project (see table 27). The activities of monitoring and evaluation will follow the policies and guidelines of the Adaptation Fund as well as those of the BOAD in the matter. Monitoring and evaluation system will facilitate learning, replication and scale upgrading of the results and lessons from the project.

The progress of the project will be checked through the Project Management Unit monitoring and evaluation, the Annual evaluation, the Mid-term evaluation, the Independent Final Evaluation and the Ex-post evaluation. Beyond this, a programme of monitoring and evaluation (M&E), in accordance with Adaptation Fund and BOAD procedures will be carried out by the BOAD Organizational Unit in charge of M&E in collaboration with its Project team and its Directorate of environment and climate change. The BOAD will report to Adaptation Fund secretariat in accordance with the Policies, Guidelines and procedures of Adaptation Fund.

Monitoring and evaluation by the Project Management Unit

For the execution of the project, the PMU will establish a system to monitor the progress of the project. Participatory mechanisms with animators will be put in place for the collection and recording of data to support monitoring and evaluation of the results and activities indicators.

Continuous monitoring of the project will be the responsibility of the PMU and will be guided by the preparation and execution of annual budgeted working plan, supported by a quarterly progress report. The annual budgeted working Plans will indicate the activities proposed for the next year and will provide the necessary details on the objectives and the quarterly reports that include information on the follow-up to the implementation of activities and the achievement of the objectives of the result. The Steering Committee will meet twice a year to review the progress of the project. They will assess during the meeting of the end of year, the annual report of management of the project from the previous period and the budgeted annual working plan of the next period. The budgeted annual working plan is established in accordance with the results framework to ensure proper compliance with and monitoring of the results of the project. Reports that are prepared by the PMU specifically in the context of the monitoring and evaluation plan are as follows: (i) the report of the project launch workshop; (ii) the annual budgeted working plans; (iii) quarterly reports; (iv) the annual management reports; (v) technical reports; and (vii) the final report.

All the reports prepared by the PMU and approved by the steering committee will be sent to the BOAD which will send it to Adaptation Fund if required.

¹⁹ A baseline situation will be specified at project start for each intervention site

- Project launch workshop and report

After the approval of the project by the adaptation fund and the BOAD and once that the the PMU is set up, the project launch workshop will be organized. This workshop will be organized at the national level and will bring together all actors involved in the implementation and monitoring and evaluation of the project. During this workshop, the tasks of monitoring and evaluation will include: (i) the presentation of the project results framework with; (ii) the review of monitoring and evaluation indicators; (iii) the preparation of projects of clauses that should be included in tender documents to ensure compliance with the functions of monitoring and evaluation; and (iv) the clarification of the distribution of the tasks of monitoring and evaluation among different actors.

After the launch workshop, the PMU will prepare a report of the project in consultation with the Secretariat for Environment and Sustainable Development. The report will include a description of the functions and the institutional responsibilities and coordination of stakeholders in project activities, start-up activities and an update on any changes in external conditions that may affect the project. It will also include a detailed budgeted annual working plan for the first year and a detailed including indicators monitoring plan.

- Budgeted annual working plan

The PMU will submit to the Steering Committee a complete annual budgeted work Plan project. The annual budgeted work Plan should include detailed activities to be performed for each of the outcomes of the project during the monthly periods and the dates to which the objectives and steps of the performance indicators will be carried out during the year. A detailed budget for the project activities to be undertaken during the year, as well as all monitoring and necessary supervision activities will also be included.

The Coordinator will circulate a draft budgeted annual working plan to the Steering Committee and the Secretariat for Environment and Sustainable Development for consideration. The budgeted annual working plan will be presented at the meeting of the Steering Committee for approval.

- Quarterly progress report

The PMU will submit quarterly progress reports to the Direction of the water mobilization within 10 days of the end of each quarter. Analysis tools will be used to identify constraints, problems or bottlenecks that hinder the execution of the activities of the project in a timely manner in order to take appropriate corrective actions. They are assessed on the basis of systematic monitoring of performance indicators and products identified in the framework of the results of the project. The PMU will forward these reports to the members of the Steering Committee and the MESD.

- Technical reports

The technical reports will be prepared as part of the project outputs as well as for documenting and disseminating lessons learned. Drafts of all technical reports should be submitted by the PMU to the Secretariat for Environment and Sustainable Development which in turn be will presented to the Executive Committee for review and approval and to the Advisory for their information and possible comments, before they are finalized and published. Copies of finalized technical reports will be distributed to the Advisory Committee, the Executive Committee and other project stakeholders, as appropriate.

Annual evaluation

Annual evaluations that involve the project management unit, the Steering Committee of the project, the Implementing Entity (BOAD) and representatives of the beneficiary communities will be conducted. The secretariat of Adaptation Fund could be involved in this evaluation. They will be organized under the supervision of the Planning Director and in collaboration with the coordinator of the project, the preparation of annual progress reports, including recommendations to be submitted for adoption to the Project Steering Committee. They will take into account the progress toward goals, lessons learned, risks management, implemented budgets and difficulties. The inspection by the Project Management Unit will be complemented by the financial monitoring by a competent body.

Mid-term evaluation

Two years after the start of the project, a Mid-tern evaluation will be conducted independently with one or more independent consultants. The purpose the Mid-tern evaluation is to review the progress and effectiveness of project execution in terms of the achievement of objectives, outcomes and outputs. The conclusions and recommendations will be crucial to bring about improvements in overall project design and execution strategy, if needed, for the remaining period of the project. The Steering Committee will complete necessary arrangements for the Mid-tern evaluation, in consultation with the Secretariat for Environment and Sustainable Development.

The Mid-tern evaluation shall include at the least the following elements:

- an analysis of the project's execution in terms of effectiveness, efficiency and compliance with set timeframes;
- an analysis of the effectiveness of the cooperation mechanisms between the parties;
- identifying issues requiring decisions and corrective actions;
- a proposal for interim corrections and/or adjustments to the execution strategy, as necessary;
- a description of the technical achievements and lessons learned arising from design, execution and project management.

Some of the critical elements to which both the Mid-term evaluation must pay particular attention are:

- the degree of acceptance and involvement of the beneficiaries, communities and local organizations in the information and alert systems established;
- the level of incorporation, among the direct beneficiaries, of practices from the agro technology transfer activities;
- the level of understanding and awareness among decision makers and beneficiaries of the need and importance of measures for adapting to climate change;
- the level achieved in terms of preparation, monitoring and adaptation;
- the reduction of negative impacts achieved in different areas (environmental, social, economic);
- the level of incorporation of measures to adapt to climate change in the policies and action plans and territorial development at regional level and their efficient implementation;
- the degree of participation and representation of women in the planning, training, and execution of project activities and the project's effect on the productive activities of the region.

All the institutions involved in the monitoring and the execution of the project will give their support to this independent mid-term evaluation. It is among other: the Steering Committee of the project, the Implementing Entity, the Directorate- General of Environment, Directorate-General of Agriculture, Directorate-General of Water Resources, Directorate-General of Livestock, Directorate-General of Forests and Fauna, Directorate- General of National Meteorology, Local Government, Institute of Women and Children, Regional Centre for the Provision of Drinking Water and Low Cost Sanitation, National Institute of Agrarian Research, National Institute of Research and Applied Technology

The report of the Mid-term evaluation will be submitted to the Minister of Agriculture who will send it to the Minister of planning, the Implementing Entity.

Independent Final Evaluation

Shortly before the completion of the project an Independent Final Evaluation will be made by one or more independent consultants. The purpose of this evaluation is to describe project impacts, sustainability of results and the degree of achievement of long-term results. The Independent Final Evaluation should also indicate any future actions needed to ensure the sustainability of project results, expand the impact in successive phases, integrate and increase products and practices and disseminate the information obtained amongst the authorities and institutions with competencies in adapting to climate change in rural areas, so as to ensure the continuity of the processes initiated by this project.

Final Report

Within 3 months before the date of completion of the project, the Project coordinator will present to the MESD, the draft of the final report. The main purposes of the Final Report are to provide guidance to ministers and officials on political decisions necessary for following up the project and to present the donor information on the use of funds. As such, the final report will consist of a brief summary of the main products, findings, conclusions and recommendations for the project, without unnecessary background, the descriptions or technical details. The final report will include an assessment of activities, a summary of training and recommendations expressed in terms of their practical application. This report shall specifically include the findings of the final report draft with Secretariat for Environment and Sustainable Development. The final report will be submitted to the Steering Committee for approval.

Ex-post evaluation

In accordance with BOAD procedures, an ex-post evaluation is conducted two or three years after the end of a project. This activity will therefore financed and conducted by BOAD to measure the impact of the project on beneficiaries.

The costs associated with implementing of M&E system are detailed in the table below.

	intation of Mac system			
Activity	Responsible Party	Timeframe / Frequency	Budgeted Costs (USD)	Budgetary Reference
Launch Workshop Project Launch Report	PMU, DGE PMU	the start of the project Days after the Launch workshop	5 000	Project management cost (line 4.3.1)
Annual Operating Plan and Budget validation	PMU, Steering Committee	Annual	6 000	Included in project management cost (Steering committee meeting) (line 4.3.4)
Field Impact Monitoring and Progress Evaluation	PMU, DGE,	Annual	5 000	included in project management cost (line 4.3.6)
Quarterly progress Reports	PMU	Quarterly	-	Included in project management cost (work of the PMU
Annual Management Reports	PMU	Annual	-	members)
Evaluation of Technical Reports	GDE, PMU, Steering Committee and with contributions from institutions involved in the monitoring and the execution of the project	Annual	10 000	Included in project management cost (Steering committee meeting) (line 4.3.4)
Mid-term evaluation and report	External consultant/s, Steering Committee contributions from institutions involved in the monitoring and the execution of the project	Halfway through project implementation	9 000	Included in project management cost (line 4.3.7)
Final Evaluation and report	External consultant/s, GDE, PMU Steering Committee and others	Half way through project implementation	10 000	Included in project management cost (line 4.3.8)
Total			44 000	

Table 25: Implementation of M&E system costs

The Monitoring and evaluation functions of the implementing entity (BOAD) are defined in the table 18 at the page 117. The costs associated with implementing Entity monitoring are detailed below.

Specialized Technical Services	Responsible Parties at BOAD	Budget US\$	Time frame
Quarterly reports	Programme manager and Monitoring and Evaluation Unit	30 000	Quarterly
Monitoring and Annual progress reports	Programme manager and Monitoring and Evaluation Unit	10,000	At the end of each year
Mid-term Evaluation	Programme manager and Monitoring and Evaluation Unit External Consultants	10,000	At the mid-point of programme implementation.
Final Evaluation	Programme manager and Monitoring and Evaluation Unit External Consultants	10,000	At least three months before the end of programme implementation
Project terminal Report	Programme manager and Monitoring and Evaluation Unit External Consultants	5,000	At least three months before the end of the programme
Audit	Programme manager and internal audit unit External Consultants	30,000	Yearly
Visits to field sites	Programme manager and Internal audit unit Monitoring and Evaluation Unit External consultants Government representatives	10,000	Yearly
TOTAL INDICATIVE COST		US\$105,000	

Table 26: Implementing entity monitoring /supervision costs

Environmental and social monitoring program

Despite the knowledge of certain environmental and social phenomena related to generic impacts of the project activities, it nevertheless remains that there is still a degree of uncertainty in the accuracy of other impacts, particularly regarding diffuse impacts and residual impacts. For this reason, it is necessary to develop an environmental monitoring program. The latter shall verify the correctness of the evaluation of certain impacts, assess the effectiveness of mitigation measures implemented and allow to make proposals for possible corrective action when necessary. The environmental monitoring program will present the indicators to monitor the mitigation and improvement measures. Moreover, the environmental and social monitoring will track the evolution of the state of the environment, including the sensitive elements, using relevant indicators on the environmental components established on a consensual basis by the various stakeholders in the execution. The monitoring indicators as well as some parameters should be redefined and refined following completion of detailed environmental studies

Responsabilities of environmental and social risks monitoring

Environmental monitoring and monitoring will be provided by the Competent Environmental Assessment Authority (AAAC) in collaboration with the General Directorate of Environment (GDE) in relation to the Project Management Unit. From the point of view of institutional arrangements, at the central level, environmental monitoring will be the primary responsibility of AAAC. This mission will be carried out in collaboration with the General Directorate of Agriculture (GDA) and other structures involved in the project.

All the results of the monitoring should also be discussed and shared during the sessions of the National Project Steering Committee for validation. At regional and local level, the monitoring and monitoring system defined at the central level will be based on the Regional Environmental Directorates of Gabù and Bafatà in collaboration with the Regional Directorates for Agriculture and other devolved technical services (livestock, water and forest, civil protection, etc).

The capacity-building activities to be carried out include training for these different actors in order to ensure appropriation of the content of the ESMF. They also cover field missions in the context of the implementation of the monitoring and environmental monitoring program.

The project implementation manual should take into account the ESMF plan. The Project Management Unit will be responsible for the implementation of the Environmental and Social Management Framework Plan (ESMFP). As for the AAAC, it will oversee the monitoring and evaluation of the implementation of the ESMP, in accordance with the environmental procedures of Guinea Bissau and taking into account the E & S principles of the BOAD Policy and Guidelines Adaptation Fund.

In order to overcome the monitoring tasks, the AAAC will be supported by the technical institutions, namely: (i) the Directorate of Plant Protection for all matters relating to the management of pests and pesticides, (ii) The Environment through the General Directorate of Environment; (iii) the General Directorate of Agriculture and its regional services; (iv) the Directorate General of Civil Protection; (v) the Directorate of Forests and Livestock; (vi) Services for water management and village water supply, the Directorate General of Rural Engineering; (vii), the National Institute of Statistics; (viii), the General Directorate of Water and Forests, the National Institute for Agricultural Research, etc..

All environmental and social monitoring activities will be conducted under the supervision of the implementing entity (BOAD), which will send monitoring reports to the Adaptation Fund.

To assess the effectiveness of project activities, the environmental and social monitoring indicators are proposed (see table 23).

E. Include a results framework for the project proposal, including milestones, targets and indicators.

Table 27: Result framework

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
General Objective: strengthen practices and capacities in climate-smart agriculture practices in the project region and at institutional level	Number of the project beneficiaries	0	 54 516 persons of which (28 075 women, beficiaries of the 1762 ha irrigated areas with the infrastructures developed to build resilience of the population for their food security with: 24 516 persons (4000 agricultural groups or households) direct beneficiaries of 1362 hectares developed for rice production 16800 persons (2800 agricultural groups or households) direct beneficiaries of market gardens production 6000 persons (1000 breeders groups or household) direct beneficiaries of 1000 ha of pasture 7200 persons (1200 households) direct beneficiaries of the water supply 	Monitoring and evaluation reports	Disponibility of financial resources Political willness of national and local governments Selection of vulnerable and very active people who have shown interest in the project
Component 1: Development of technical and institutional capacity to address the increase of climate risk with the	Level of technical and institutional capacity of national and local government institutions and experts, farmers groups,	Lack of technical and institutional capacity to address the increase of	The capacities of 6 Ministries and local government services (agriculture, livestock, hydraulic, forest, environment, civil protection) are built to	Monitoring and evaluation reports	Effective involvement of technical services and ministries

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
adaptation practices and planning	private professionals, associations and government to address the increase of climate risk with the adaptation practices and planning	climate risk with the adaptation practices and planning	address the increase of climate risk with the adaptation practices and planning 6800 groups or households are informed about climate risk with the adaptation practices and planning	Documents de politiques et plans relatifs au climat disponibles Monitoring and evaluation reports	
	Number and type of policies, procedures and guidelines enhanced or put in place which integrated climate-smart related	Lack of guidelines for adaptation risk management and sustainable management of natural resources and social issues	1 national policy document, 4 local and regional development plans incorporate issues related to climate At least 10 policies, procedures and guidelines have been developed, strengthened and updated in application for the rational management of environmental and social issues	Policy documents and procedures, as well as environmental and social guidelines available	
Outcome 1.1. Technical capacity of government and field workers to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions enhanced	Number of staff trained to help beneficiaries use climate-smart agriculture practices to respond and mitigate the impacts of climate-related events	Lack of training and documentation (policies, guidelines, etc.) about the adaptation to climate change in majority of the sectors of project area	The capacities of 6 Ministries and local government services (agriculture, livestock, hydraulic, forest, environment, civil protection) are built to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions	Training reports Monitoring and evaluation reports	Full participation of government experts, local and regional technical services and the population affected

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
Output 1.1.1. Socio-climatic vulnerability assessment for East Guinea-Bissau	Number of socio-climatic vulnerability assessment for East Guinea-Bissau	Lack of data related to socio-climatic vulnerability	1 assessment document on socio-climatic vulnerability available for East Guinea Bissau with data for adaptation actions planning	The assessment report	Full participation and involvement of local public services
			1 Guideline on local socio- climatic vulnerability assessment available	The Guideline on local socio-climatic vulnerability assessment	
Output 1.1.2. Assessment of technical capacity building needs of ministries and field operatives for adaptation planning	Number of key ministries with needs in adaptation planning identified	Lack of capacities of key ministries experts in adaptation planning	1 report on assessment of technical capacity building needs of ministries and field operatives for adaptation planning	report on assessment of technical capacity building needs of ministries and field operatives for adaptation planning	Full participation and involvement of government institutions and local services
Output 1.1.3. Formulation of detailed intervention plan for pilot climate-smart agriculture actions and policies, procedures and guidelines related to climate change, gender and natural resources	Number of detailed intervention plan for pilot climate-smart agriculture actions prepared	Absence of detailed intervention plan for pilot climate-smart agriculture actions	01 detailed intervention plan for pilot climate-smart agriculture actions for East- Guinea Bissau elaborated	Detailed intervention plan for pilot climate-smart agriculture actions for East-Guinea Bissau	Full participation and involvement of national and local development stakeholders (government institutions, local government, NGOs, Associations, private sectors, populations, etc.)
	Number of policies and plans revised to take in account climate change adaptation issues and natural resources sustainable management	The National agricultural development policy letter, the of the National policy letter for the livestock development; The National Master plan of water and sanitation	The forest management policy is reviewed to take into account the climate change issues	Improved forest management policy	
		The Regional development plan of Gabu and local development plan of Pirada and Pitche are reviewed	The regional development plan of Bafata is reviewed to take into account the climate change issues	Improved regional development plan of Bafata	

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
			3 local development plans are reviewed to take into account the climate change issues in the sectors of Sonaco, Contuboel and Ganadu	Improved local development plans taking into account the climate change issues in the sectors of Sonaco, Contuboel and Ganadu	
	Number of policies, procedures and guidelines elaborated and implemented		At least 10 policies, procedures and guidelines drafted to include environmental and social safeguards and gender issues, are approved and implemented	Documents of policies, procedures and guidelines prepared Implementation report of the policies, procedures and guidelines prepared	
Outcome 1.2. Farmers groups, private professionals of development, associations and government experts have integrated knowledge on climate-smart agriculture, in practice (on-site) and adaptation planning	Number of farmers groups, private professionals of development, associations trained on climate-smart agriculture knowledge to control flooding, to maintain agricultural production, livestock and population water supply in drought periods	267 producers of which 58 women are trained on the techniques on Zai, rotation, association of cultures and transverse plowing in LDCF project	At least 4 000 new producers of which 2060 women are trained on-site in climate-smart agriculture practices	Monitoring report	Full participation and involvement of national and local development stakeholders (government institutions, local government, NGOs, Associations, private sectors, populations, etc.)
Output 1.2.1. Technical trainings on adaptative systems and organizational capacity building for identified target groups	Number of beneficiaries trained on adaptative systems	The trainings on the consequences of the adverse impacts of climate change and adaptive measures in terms of small- scale irrigation are insufficient in project area	40 sessions per year in two years (i.e two sessions on each project site) are conducted for beneficiaries to build their capacities on adaptative systems	Training report	Involvement of beneficiaries to apply the knowledge and practices for adaptation to climate change Sensitization of beneciairies to overcome possible cultural barriers
		267 producers of which 58 women are trained on the techniques on Zai, rotation,	At least 4 000 new producers of which 2060 women are trained on-site in climate-smart agriculture practices	On-site Practical training on resilient Climate Change Practices report	

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
	Number of groups whose organizational capacities are strengthened	association of cultures and transverse plowing in LDCF project Lack of groups organization in finance and management	At least 200 famers groups benefited from financial and management capacities building	Organizational training report	
1.2.2. Technical assistance and rural extension for subprojects	Number and type of technical assistance provided for subprojects development	Lack of technical assistance to producers	100% of beneficiaries benefited from technical assistance of decentralized services	Technical assistance report	Full participation and involvement of public decentralized services
1.2.3. Formulation/Update of contingency plans for climate- risk management on the micro- dams level	Number of formulation/ updated contingency plan to manage flood risks	Contingency plan inexistent in the project areas	01 Conteingency formulated 21 Sites contingency plan adapted At least 75% of beneficiaries population mastered the contingency plan and are able to address climate change risk	Contingency plan Monitoring report	Involvement of target area Civil protection and beneficiaries
Output 1.2.4. Support for famers groups by the government technical experts for adaptation actions	Percentage of producers that benefited from technical support services for the implementation of adaptation measures	Very lack support of the technical services to producers	100 % of beneficiaries benefited the technical support of decentralized services	Basic data collected on sites Trimestrial management report	Full participation and involvement of beneficiaries and public decentralized services
	Level of gender integration and environmental and social measures in the framework of the project	Non application of environnemental, social and gender issues due to lack of knowledge	100% environnemental, social and gender measures are applied	Mid-term evalautaion report	

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
Output 1.2.5. Capacity building to prevent forest fires	Number of fire brigades put in place Percentage of fire brigarde organized and training on forest fire prevention	Lack of fire brigades in the project area	At least 40 fire brigades are put in place 100 % of fire brigades capacities are built to prevent and combat bushfire	Meeting and training reports	Full participation and involvement of civil protection, forest services, Rural Climate Change Forum (RCCF) and Environmental Vigilance Committees (CRA) Involvement fire brigades members Involvement of the head villages and the population
Component 2: Enhance the resilience of existing agricultural productive systems, including water control	Percentage of the targeted population aware of the adverse impacts on climate change foreseen and the adequate responses	Low percentage of the targeted population aware of the adverse impacts on climate change foreseen and the adequate responses	75% of the targeted beneficiaries aware of the adverse impacts on climate change foreseen and the adequate responses	Monitoring and evaluation of resilience and adaptive actions report	Full participation and involvement of national and local development stakeholders (government institutions, local government, NGOs, Associations, private sectors, populations, etc.)
Outcome 2.1. Agricultural activities are climate-smart and contribute to sustainable increased in productivity and enhanced national food security	Average of increased yield of rice and others crops (kg / ha), measured at site level – showing improvements compared to national and/or regional average (Gabù and Bafatà) due to climate-smart agriculture pratctices Number of beneficiary who have improved their food	600 kg/ha of rice 10000 kg/ha of potatoes 8000kg/ha of tomato 8000 kg/ha of onion 42% of the needs of rice of the beneficiaries are	4000 t/ha of rice 25000 kg/ha of potatoes 22000kg/ha of tomato 23000 kg/ha of onion 100% of the needs of rice of the beneficiaries are	Annual reports	Reluctance to apply the knowledge and practices for adaptation to climate change Cultural barriers in accepting new techniques can be expected.
Output 2.1.1. Development of lowlands to maintain agricultural production in drought periods	security, at least with regard to rice as a staple food Number of hectare of lowlands developed	not satisfied Lack of infrastructures to develop irrigation	satisfied 1000 ha of lowlands developed to maintain agricultural production in drought periods	Annual reports	Full participation and involvement of beneficiaries

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
	Water availability to maintain agricultural production in drought periods				
Output 2.1.2: Construction of micro-dams for irrigation of rice, vegetable crops and livestock water supply	Number of hydraulic infrastructure to raise water for irrigation and livestock	Lack of infrastructures to develop irrigation and prevent site silting	20 micro-dams constructed for irrigation of rice and vegetable crops and rain and storm water retention systems for improved livestock water supply	Annual reports	Full participation and involvement of beneficiaries
	Percentage of satisfaction of the water needs of plants	Water needs of insufficient plants affecting production (ie. Irregularity of irrigation and not controlled and early drought)	100% of the water needs of plants met with a controlled irrigation		
Output 2.1.3. Rehabilitation/improvement of soil productivity and small-scale investments into agriculture inputs, machinery and tools	Number of population sensitized about the harms of slash and burn agriculture practice on soil fertility and crop yields	Lack of sensitization campaigns on the harms of slash and burn agriculture practice on soil fertility and crop yields	At least 50 000 beneficiaries are sensitized on the harms of slash and burn agriculture practice on soil fertility and crop yields	Sensitization reports	Full participation and involvement of beneficiaries
	Percentage of targeted population applying adaptation measures	55 % of producers trained in the framework of the LDCF project are applying adaptatives techniques	At least 75% of beneficiaries apply climate-smart agriculture practices on the adaptation project sites	Field impact evaluation report	Involvement of the PMU
		0 producers trained on techniques of Intensive rice	At least 200 producers of which 110 women are trained on techniques of Intensive rice growing system (SRI)	Field impact evaluation report	

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
	Nombre de producteurs formés sur la technique de multiplication des semences Average agricultural productivity crops (kg / ha), measured at site level – showing improvements compared to the baseline	growing system (SRI) 28 producers trained on the technique of the multiplication of the rice seeds and produce seeds 600kg/ha for the rice 10000 kg/ha of potatoes 8000kg/ha of tomato 8000 kg/ha of onion	At least 400 producers trained on the technique of multiplication of rice and produce seeds 4000 kg/ha for the rice 25000 kg/ha for potatoes 22000kg/ha of tomato 23000 kg/ha of onion	Training report on the multiplication of seeds Monitoring report Agriculture campaigns report Data collected by project animators	
	Number of hectare developed for forage production	16.5 hectares of Brachiaria (forage) installed for 468 breeders (or 0.035 ha by people) under the LDCF project	1000 hectare of forage (brachiaria and leguminous plants) installed for 6000 people (0.156 ha by people) At least 500 breeders and		
	farmers trained on organic fertilizer production	80 breeders trained (40 men and 40 women) on the technical production of fertilizers organic from feces of livestock	farmers which of 250 women trained in the technical production of fertilizers organic from feces of livestock		

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
	Number of rain gauges installed to support the monitoring of the adaptation of agriculture to climatic disturbances	Lack of rain gauges in the project area	120 rain gauges installed to support the monitoring of the adaptation of agriculture to climatic disturbances	Data collected	
	Number of mission of monitoring and analysis of water and soil quality	Absence of water and soil quality analysis in the project area	Equipment of the of the soil and water quality analysis available At least one mission for water and soil quality analysis is carried out per year	Quality of the soil and water analysis equipment Analysis report of technical services	
Output 2.1.4. Construction of drills and ramps for improved livestock and domestic water supply and market gardens development	Number of drinking water points created to supply drinking water to the population	Lack of drinking water points for home consumption	30 wells of water and 5 ramps to access River Corubal to improve the supply of drinking water for the population and livestock	Monitoring report	Full participation and involvement of beneficiaries
	Number of hectare developed for market gardening and number of beneficiaries	Lack of market gardening undertaken due to lack of water	400 ha of new market gardens are developed16 800 persons benefit from gardening activities	Annual report Evaluation report	
Componet3: Knowledge management of lessons learned on climate-smart agriculture and adaptation planning	Strong knowledge management strategy is put in place and operational Lessons learned are dissiminated in the all regions of the Country	Only two sectors of one region are benefited the dissemination of climate-smart agriculture practices	At least 4 regions of the country will benefit the dissemination of climate- smart agriculture practices	Document of strategy for dissemination of knowledge and lessons learned from the project Report of lessons learned dissemination	Full involvement of the PMU and beneficiaries

Logic intervention	Indicator	Basic data	Target	Mean of verification	hypothesis / Risk
Outcome 3.1 Sustainable climate-smart agriculture practices and management is disseminated in comparable regions of the country and other West African countries	Lessons learned from the project are disseminated trough a knowledge management strategy, a manual and other materials on best practices and measures for climate-smart agriculture, a website at the local, national and regional level	Absence of knowledge management strategy, a manual and other materials on best practices and measures for climate-smart agriculture, a website at the local, national and regional level	knowledge management strategy, manual and other materials on best practices and measures for climate- smart agriculture, a website at the local, national and regional level will be put in place	Report of lessons learned dissemination Final report	Full involvement of the PMU and beneficiaries
Output 3.1.1. Knowledge management strategy developed	strategy for dissemination of knowledge and lessons learned available	Absence of strategy for dissemination of knowledge and lessons learned	One strategy for dissemination of knowledge and lessons learned available	strategy for dissemination of knowledge document	Full involvement of the PMU and beneficiaries
Output 3.1.2. Project website developed and active	Website available for project information diffusion	Absence of Website for project information diffusion	Operationalization of project website	Operational website on project information dissemination	Full involvement of the PMU and beneficiaries
Output 3.1.3. Manual and other materials on best practices and measures for climate-smart agriculture are developed	Number of manuals of good practice on climate-smart agriculture developed and disseminated	Absence of manuals of good practice on climate- smart agriculture	One manuals of good practices on climate-smart agriculture developed and disseminated	manuals of good practice on climate-smart agriculture	Full involvement of the PMU and beneficiaries
Output 3.1.4. Dissemination of results to other regions of Guinea-Bissau and West Africa	Number of regions and populations affected by the dissemination of the results of the project	The climate smart agriculture has not yet experienced expansion in many regions and in West Africa countries	The dissemination of the project results and lessons learned has been effective in, at least, of 4 regions and in West Africa countries	Lessons learned dissemination report	Full involvement of the PMU and beneficiaries

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

	e project with the Results	Framework of the A		Cront
Project Objective (s) <u>19</u>	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (X
(3) <u>15</u>			maleator	1000 USD)
OS1. Develop technical and institutional capacity of government and civil society (private sector, local communities, NGOs) to address increasing climatic risk in climate	Number of beneficiaries informed about issues related to climate risk through the actions of meteorological services, the soil and water analysis and the actions against flooding and bushfires	Outcome 1: Reduced exposure at national level to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	
risk in climate change adaptation planning	Level of technical and institutional capacity of national and local government institutions and experts to address the increase of climate risk with the adaptation practices and planning	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Number and type of targeted institutions with increased capacity to minimize exposure to climate variability hazards	
	Number of the local population beneficiaries of the project aware of the negative impacts of climate change and appropriate responses	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of the target population aware of the negative impacts of climate change and appropriate responses	700
	Percentage of beneficiaries who have adopted the climate-smart agriculture practices		3.2. Modification in behavior of targeted population	
	Number and type of policies, procedures and guidelines enhanced or put in place which integrated climate- smart related	Outcome 7: Improvement of policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	
OS2. Enhance the resilience of existing agricultural productive systems and contribute to the diversification of production, including via implementation of	Number of small- scale irrigation infrastructure, micro- dams and drills put in place to control flooding, to maintain agricultural production, livestock and population water supply in drought periods	Outcome 4: Increase of capacity to adapt to climate change within development areas and regarding the relevant natural resources	4.2. Physical infrastructure improved to withstand climate change and variability- induced stress	7 550

Table 28: Aligns of the project with the Results Framework of the Adaptation Funds

	-			
climate-resilient water control and management actions to minimize risks from intense droughts and floods OS3. Promote knowledge dissemination of lessons learned on climate-smart agriculture and adaptation	Percentage of the target beneficiaries by means of resilient livelihoods to climate change suffered Strong knowledge management strategy is put in place and operational Lessons learned are dissiminated in the all	Outcome 6: Diversify and strengthen livelihoods and sources of income for vulnerable people in targeted areas Outcome 1: Reduced exposure to climate-related hazards and threats	 6.2. Percentage of the target population by means of resilient livelihoods to climate change suffered 1. Relevant threat and hazard information generated and disseminated to stakeholders on 	
planning to other regions of the country, other countries in West Africa and to international climate change negotiations and fora, including the UNFCCC process	regions of the Country		a timely basis	150
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant amount (USD)
Outcome 1.1. Increased technical capacity of government and field workers to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions	Number of staff trained to help beneficiaries to use climate-smart agriculture practices to respond and mitigate the impacts of climate-related events	Product 2.1 : Capacity building of centers and national and regional networks to respond quickly to extreme weather events	2.1.1. Number of staff/agent trained to respond to and mitigate the impacts of climate-related events	
	Capacity of national and regional staff to assess impacts, vulnerability and adaptation needs in extremely vulnerable regions		2.1.2. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	242.5
	Number of policies, procedures and guidelines enhanced or put in place which integrated climate- smart strategies and practices	Output 7: Improved integration of climate- resilience strategies into country	7.2. No. or targeted development strategies with incorporated climate change priorities	

West African countries	website at the local, national and regional level			
Outcome 3.1 Sustainable climate-smart agriculture practices and management is disseminated in comparable regions of the country and other	Lessons learned from the project are disseminated trough a knowledge management strategy, a manual and other materials on best practices and measures for climate- smart agriculture, a	Product 7: Better integration of climate resilience strategies into national development plans	7.1. Type and sector of policies introduced or adjusted to meet the risks of climate change	150
	Reduction rate of food insecurity in the project area with the climate-smart agriculture pratices	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.2.1. Type of income sources for households generated under climate change scenario	7550
Outcome 2.1. Agricultural and livestock activities are climate-smart and contribute to sustainable increases in productivity and enhance national food security	Number of small- scale irrigation infrastructure, micro- dams and drills put in place to control flooding, to maintain agricultural production, livestock and population water supply in drought periods	Ouput 4: Physical, natural and social vulnerable assets strengthened in response to the impacts of climate change, including climate variability	4.1.2. Number of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by type of assets)	
Outcome 1.2 Farmers groups, private professionals of development, associations and government experts have integrated knowledge on climate-smart agriculture, environmental, social and gender in practice (on- site) and adaptation planning	Number of farmers groups, private professionals of development, associations trained on climate-smart agriculture knowledge to control flooding, to maintain agricultural production, livestock and population water supply in drought periods	Output 3 : Targeted population groups involved in sensitization activities for the adaptation and risk reduction	3.1.1 Number and type of risk reduction actions or strategies introduced at local level	457.5

The Adaptation Fund core indicators suggested to be monitored during the project implementation are below.

The Adaptation Fund core indicators suggested to be monitored during the project implementation are below.

		Fund Core Impact Indicator "Assets Devel		
Date of Report				
Project Title	Scaling	up climate-smart agriculture in East (Guinea Bissau	
Country	Guinea	a Bissau		
Implementing Agency	WEST A	FRICAN DEVELOPMENT BANK (BOAD)		
Project Duration	05 YEAF	RS		
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
AGRICULTURE AND LIVESTOCK				
Targeted Asset Developed Development of small- scale irrigation infrastructure, micro- dams and drills to control flooding, to maintain agricultural production, livestock and population water supply in drought periods	0	 Development of : 5 small-scale irrigation systems to develop 750 ha of lowlands with dykes and dams of retention and fragmentation, of anti-erosion protection and of the slopes management against the silting up ((output 2.1.1)) 15 micro-dams to develop 912 ha for irrigation of rice and vegetable crops and rain and storm water retention systems for improved livestock water supply (output 2.1.2) 		
Drinking water supply Water supply with drills and ramps	0	- 30 drills and 5 ramps for improved livestock and domestic water supply and 100 ha of market gardens development (output 2.1.4)		

Table 29: Adaptation Fund Core Impact Indicator "Assets Developed"

	Adaptation	ation Fund Core Impact Indicator "Number of Benef Fund Core Impact Indicator "Number of Beneficiaries"	iciaries"			
Date of Report						
Project Title	Scaling up clin	nate-smart agriculture in East Guinea Bissau				
Country	Guinea Bissa	Guinea Bissau				
Implementing Agency	WEST AFRIC	AN DEVELOPMENT BANK (BOAD)				
Project Duration	05 YEARS					
AGRICULTURE AND LIVESTOCK	Baseline	Target at project approval	Adjusted target first year of implementatio n	Actual at completio n ²⁰		
Direct beneficiaries of the 1762 irrigated areas with the infrastructures developed to build resilience of the population for their food security	0	 54 516 beficiaries of the 1762 ha irrigated areas with the infrastructures developed to build resilience of the population for their food security with: 24 516 persons (4000 agricultural groups or households) direct beneficiaries of 1362 hectares developed for rice production (Output 2.1.1. and 2.1.2) 16800 persons (2800 agricultural groups or households) direct beneficiaries of market gardens production 6000 persons (1000 breeders groups or household) direct beneficiaries of 1000 ha of pasture 7200 persons (1200 households) direct beneficiaries of the water supply 				
Women direct beneficiaries of the 1762 irrigated areas with the infrastructures developed to build resilience of the population for their food security	0	At least 28 075 women beficiaries of the 1762 ha irrigated areas with the infrastructures developed to build resilience of the population for their food security (Output 2.1.1., 2.1.2, 2.1.4)				
Indirect beneficiaries of the project	0	44 454 indirect beneficiaries of the crops production for their food security (Output 2.1.1., 2.1.2, 2.1.4)				
Female indirect beneficiaries of the irrigated areas with the modern techniques systems to build resilience of the population for their food security	0	22 893 womens indirect beneficiaries of the crops production for their food security (Output 2.1.1., 2.1.2, 2.1.4)				
Youth indirect beneficiaries of the irrigated areas with the modern techniques systems to build resilience of the population for their food security	0	462 960 young indirectly beneficiaries of 1000 hectares of developed sites through modern irrigation techniques (Output 2.1.1.)				

Table 30: Adaptation Fund Core Impact Indicator "Number of Beneficiaries"

²⁰ At project completion, the proponent could report on % targeted population reached or successfully supported (the absolute numbers could then be deduced from that figure)

G. Include a detailed budget with budget notes, a budget on the use of management fees Implementing Entity, and an explanation and breakdown of implementation costs

In accordance with the PCN endorsed by the Board of the Adaptation Fund by Decision B.27/9 during its 27th meeting on 17 and 18 March 2016 in Bonn, Germany, the total cost of the project amounts is USD 9,979,000.

Implementing Entity (BOAD) Specialized technical services budget

The implementing entity fee will be utilized by BOAD to cover its indirect costs in the provision of general management support and specialized technical support services. The table below provides an indicative breakdown of the estimated costs of providing these services.

T-LL OA	Less the second second second	A 1 1 1 1 1 1 1 1 1 1 1	and the second states of	
1 able 31:	Implementation	technical	services budget	

Step	Indicatives services	
Identification, Sourcing and Screening of ideas	 Provide information on substantive issues in adaptation associated with the purpose of the Adaptation Fund (AF). Engage in upstream policy dialogue related to a potential application to the AF. Verify soundness and potential eligibility of identified idea for AF. 	US\$ 35,000
Feasibility Assessment / Due Diligence Review	 Provide up-front guidance on converting general idea into a feasible project; Source technical expertise in line with the scope of the project; Verify technical reports and project conceptualization; Provide detailed screening against technical, financial social and risk criteria and provide statement of likely eligibility against AF requirements; Determination of execution modality and local capacity assessment of the national executing entity; Assist in identifying technical partners; Validate partner technical abilities; Obtain clearances from AF. 	US\$ 108,000
Development & Preparation of sub- project	 Provide technical support, backstopping and troubleshooting to convert the idea into a technically feasible and operationally viable project; Source technical expertise in line with the scope of the Project needs; Verify technical reports and project conceptualization; Verify technical soundness, quality of preparation, and match with AF expectations; Negotiate and obtain clearances by AF; Respond to information requests, arrange revisions; etc. 	US\$ 140,000

Step	Indicatives services	
Step Implementation of the project	 Indicatives services Technical support in preparing TORs and verifying expertise for technical positions; Provide technical and operational guidance project teams; Verification of technical validity / match with AF expectations of inception report; Provide technical information as needed to facilitate implementation of the project activities; Provide advisory services as required; Provide technical support, participation as necessary during project activities; Provide troubleshooting support if needed; Provide support and oversight missions as necessary; Receipt, allocation and reporting to the AF of financial resources Allocate and monitor Annual Spending Limits based on agreed work plans; Oversight and monitoring of AF funds; Provide technical support in preparing TOR 	US\$ 285,000
Project evaluation	 Provide technical support in preparing TOR and verify expertise for technical positions involving evaluation and reporting; Conduct the evaluation field missions; Participate in briefing / debriefing; Verify technical validity / match with AF expectations of all evaluation and other reports; Undertake technical analysis, validate results, and compile lessons; Disseminate technical findings. 	US\$ 118,000
Supervision, project monitoring and reporting	 Provide technical support in preparing TOR and verify expertise for technical positions involving in the monitoring and reporting; Provide technical monitoring, progress monitoring, validation and quality assurance; Conducted field monitoring missions; Verify the implementation of adptative actions Verify the concrete implementation of the ESMPs and recommend specific corrective actions to ensure that the project complies with the E & S principles of the Adaptation Fund; Submit periodic reports on the implementation of ESMPs to the Adaptation Fund in accordance with the schedule agreed by both parties. 	US\$ 105,000
TOTAL	· · · · · · · · · · · · · · · · · · ·	US\$ 781,000

Project Budget for the Adaptation Fund

The project will be fully funded by the Adaptation Fund. However, the taxes are supported by the Bissau-Guinean State. The following table presents the budget of the Adaptation Fund.

Table 32: Adaptation Fund summary budget

COMPONENT	Total HT (X 1000 USD)	Taxes (1000 USD)	Total TTC (X 1000 USD)
Component 1:. Development of technical and institutional			
capacity to address increasing climatic risk in adaptation			
practices and planning	700	133	833
1.1. Development of technical and institutional capacity to address			
the increase of climate risk with the adaptation practices and	242,5	46.075	200 575
planning 1.2. Farmers groups, private professionals of development,	242,5	46,075	288,575
associations and government experts have integrated knowledge on			
climate-smart agriculture, in practice (on-site) and adaptation			
planning	457,5	86,925	544,425
Component 2: Enhance the resilience of existing agricultural			
productive systems, including water control	7550	1434,5	8984,5
2.1: Agricultural activities are climate-smart and contribute to			
sustainable increases in productivity and enhance national food			
security	7550	1434,5	8984,5
Component 3: Knowledge dissemination of lessons learned on climate-smart agriculture and adaptation planning	150	28,5	178,5
3.1: Sustainable climate-smart agriculture practices and	150	20,5	170,5
management is disseminated in comparable regions of the country			
and other West African countries level	150	28,5	178,5
Component 4: Project execution cost	798	51	949
4.1. Investisment	13	21	134
4.2 Recurent cost	723	18	741
4.3. Monitoring and Evaluation	62	12	74
BASIC COST	9 198	1 647	10 945
Project/Programme Cycle Management Fee charged by the			
Implementing Entity	781		781
TOTAL PROJECT	9 979	1 647	11 726

The detail budget of Adaptation Funds for each component is presented in the following table (see column colored in green). In fact, the project has three main components, plus the project management component.

Component 1: Development of technical and institutional capacity to address the increase of climate risk with the adaptation practices and planning

		Total	Unit cost	Ba	sic cost pl	anning ()	K 1000 U	SD)	Total (USD)			
Activities	Unity	Quantity	Unit COSt	year 1	year 2	year 3	year 4	year 5	HT Adaptation Fund	Tax (Government Bissau- Guinéen)	ттс	
1.1. Technical capacity of government and field workers to assess	impacts, vul	nerability a	nd adaptation	n needs i	n extremel	y vulnera	able regio	ons enhai	nced			
1.1.1. Socio-climatic vulnerability assessment for East Guinea-Bissau	Nbre	1	20,0	20,00	0,00	0,00	0,00	0,00	20,00	3,80	23,80	
1.1.2. Assessment of technical capacity building needs of ministries												
and field operatives for adaptation planning	Nbre	1	10,0	10,00	0,00	0,00	0,00	0,00	10,00	1,90	11,90	
1.1.3. Formulation of detailed intervention plan for pilot climate-smart												
agriculture actions and policies, procedures and guidelines related to												
climate change, gender and natural resources Formulation of detailed intervention plan for pilot climate-	_											
smart agriculture actions	Nbre	1	10,0	0,00	10.00	0.00	0.00	0.00	10.00	1,90	11,90	
Enhancing policies, procedures and guidelines of the country	NDIE	1	10,0	0,00	10,00	0,00	0,00	0,00	10,00	1,90	11,90	
through integration of issues related to climate change,												
gender and natural resources sustainable management	FF	1	190,00	47,50	95,00	23,75	23,75	0,00	190,00	36,10	226,10	
Development of a monitoring and evaluation system	FF	1	12,50	12,5	0,00	0,00	0,00	0,00	12,5	2,375	14,875	
Sub-Total 1.1.				90,00	105,00		23,75	0,00	242,50	46,08	288,58	
1.2. Farmers groups, private professionals of development, assoc	iations and g	overnment	experts have	integrate	ed knowled	dge on cl	imate-sm	art agric	ulture, in practic	e (on-site) and		
adaptation planning												
1.2.1. Technical trainings on adaptative systems and organizational capacity built for identified target groups	FF	4	10,00	10,00	10,00	10,00	10,00	0.00	40,00	7,60	47,60	
		4 99	1.00	33,00				0,00		,		
1.2.2. Technical assistance and rural extension for subprojects 1.2.3. Formulation/update of contingency plans for climate-risk	Nb of sites	99	1,00	33,00	33,00	33,00	0,00	0,00	99,00	18,81	117,81	
management	FF	1	5.00	5.00	0.00	0.00	0.00	0.00	5.00	0,95	5,95	
1.2.4. Support for famers groups for adaptation actions			5,00	5,00	0,00	0,00	0,00	0,00	5,00	0,35	5,35	
implementation												
Support for famers groups by the government technical												
experts	FF	5	15,00	15,00	15,00	15,00	15,00	15,00	75,00	14,25	89,25	
Proximity support by sites facilitators/animators	H/M	810	0,12	10,80	21,60	21,60	21,60	21,60	97,20	18,47	115,67	
1.2.5. Capacity building to prevent forest fires												
Capacity building and operationalization of fire brigades	FF	5	25,00	25,00	25,00	25,00	25,00	25,00	125,00	23,75	148,75	
Enhancing technical and organizational capacities of Rural												
Climate Change Forum (RCCF) and Environmental Vigilance Committees (CRA) for better operationalization	FF	4	4.08	4,08	4,08	4,08	4,08	0.00	16,30	3,10	19,40	
	FF	4	4,08	4,08	4,08	4,08	4,08	0,00	10,30	3,10	19,40	
Sub-Total 1.2.				102.88	108.68	108,68	75.68	61.60	457,50	86.93	544.43	
				,		,	,	.,	,			
TOTAL 1				192,88	213,68	132,43	99,43	61,60	700,00	133,00	833,00	

Component 2: Enhance the resilience of existing agricultural productive systems, including water control

				Basic o	cost (10	00 USD))	TOTAL (1000 USD)			
Topics		Cost per unit HT (X1000 USD)	Year 1	Year 2	Year 3	Year 4	Year 5	HT (Adaptation Fund)	Tax (Government Guinea Bissau)	ттс	
2.1: Agricultural activities are climate-smart and contribute to sustainable increases in productivity	and enhan	ce national food	l secur	ity				1			
2.1.0 Support for subproject selection and design											
2.1.0.1 Support for subproject selection		1	50	0	0	0	0	50	9,5	59,5	
2.1.0.2.Complementary studies of APD, Update of the ESMP of the selected sites in the new project, DAO, supervision and control of works	Nb	8	160	0	0	0	0	160	30,4	190,4	
2.1.1: Development of lowlands to maintain agricultural production in drought periods											
2.1.1.1.Development of lowlands in the framework of the adaptation fund projects	unity of 50 ha	50	250	750	0	0	0	1000	190	1190	
2.1.1.2.Scaling up of partially developed sites within the old LDCF project	ha	1	662	0	0	0	0	662	125,78	787,78	
2.1.2: Construction of micro-dams for irrigation of rice, vegetable crops and livestock water supply	-										
2.1.2.1.Construction of micro-dams with the irrigation systems	unity of 50 ha	175	875	2625	0	0	0	3500	665	4165	
2.1.3. Rehabilitation/improvement of soil productivity and small-scale investments into agriculture inputs, machinery and tools	_										
2.1.3.1.Sensitization/Education about the harms of slash and burn agriculture practice on soil fertility and crop yields and dissemination and strengthening of climate-smart agriculture practices											
Sensitization/Educatin about the harms of slash and burn agriculture practice on soil fertility and crop yields	Sessions	1	0	5	15	0	0	20	3,8	23,8	
Dissemination and strengthening of climate-smart agriculture practices	FF	10,0	0	10	10	10	0	30	5,7	35,7	
2.1.3.2. Support access to improved seeds, resistant and short cycle	_										
Support to groups for the acquisition and multiplication of quality seeds	unity of 50 ha	3	0	15	45	0	0	60	11,4	71,4	
Construction of seed banks	Nb	1,5	0	7,5	22,5	0	0	30	5,7	35,7	
2.1.3.3. Support to groups for the acquisition of quality fertilizers, pesticides and crops conservation	unity of 50 ha	10	0	50	150	0	0	200	38	238	
2.1.3.4. Support for the adaptation of the cultural calendar to climate disturbances	_										
Installation of 120 rain gauges (pluviometers)	Nb	0,05	6	0	0	0	0	6	1,14	7,14	

				Basic o	cost (10	00 USD))	тс) TAL (1000 USD)	
Topics	Unity	Cost per unit HT (X1000 USD)	Year 1	Year 2	Year 3	Year 4	Year 5	HT (Adaptation Fund)	Tax (Government Guinea Bissau)	ттс
Support of meteorological services to famers groups for better adaptation of agriculture to climate disturbances	FF	5	5	5	5	5	5	25	4,75	29,75
2.1.3.5. Support for the analysis of soil and water quality and ESMP monitoring										
Support for the analysis of soil and water quality	FF	70	70	3,5	3,5	3,5	3,5	84	15,96	99,96
ESMP monitoring		12	12	12	12	12	12	60	11,4	71,4
2.1.3.6. Support for plowing and the acquisition of equipment /materiels for the production and valorization of products on a demonstrative basis	_									
Support to groups for clearing and plowing sites	ha	0,1	0	20	80	0	0	100	19	119
Support for the acquisition of power tillers (motor cultivators)	Nb	10	0	200	0	0	0	200	38	238
Support for the acquisition of weeders	Nb	0,01	0	10	0	0	0	10	1,9	11,9
Support for agropastoralists for the harnessing of oxen for plowing and crops transporting	Nb	4	0	240	0	0	0	240	45,6	285,6
Support for the acquisition of dehullers	Nb	7,2	144	0	0	0	144	288	54,72	342,72
2.1.3.7. Support for the production of forage for livestock (Cultivation of brachiaria, moringa, fruit trees, etc,) and increase organic manure production										
Support for the acquisition of brachiaria seed and others nutritive seed and cultivation for the production of forage	– ha	0,05	5	10	10	10	15	50	9,5	59,5
Construction of hangars for feed storing	Nbre	0,2	3	10	7	0	0	20	3,8	23,8
Support for the specialization of breeding groups in the production of brachiaria seeds	FF	10	0	10	10	0	0	20	3,8	23,8
Support to the prevention of livestock diseases through vaccination	FF	15	0	15	0	15	0	30	5,7	35,7
Promotion of the production of organic manure	unity of 50 ha	2	0	10	30	0	0	40	7,6	47,6
2.1.4. Construction of drills and ramps for improved livestock and domestic water supply and market gardens development	_									
2.1.4.1. Construction of drills for improved livestock and domestic water supply and market gardens development	_									
Geotechnical studies APD and works supervision	Nb	1	0	30	0	0	0	30	5,7	35,7
Construction work for human-powered drilling combining feeders (abreuvoirs) for livestock	Nb	14	0	140	0	0	0	140	26,6	166,6

					Basic o	cost (10	00 USD))	TOTAL (1000 USD)			
	Topics	Unity	Cost per unit HT (X1000 USD)	Year 1	Year 2	Year 3	Year 4	Year 5	HT (Adaptation Fund)	Tax (Government Guinea Bissau) 53,2 19 0,95 20,9	ттс	
	Construction of manually operated drilling for market gardens	Nb	14	70	210	0	0	0	280	53,2	333,2	
	Support for the development and enhancement of vegetable growing gardens	ha	1	0	25	75	0	0	100	19	119	
2.1.4.2. C	onstruction of ramps for improved livestock and domestic water supply											
	Complementary studies of APD, update ESMP, DAO, supervision and control of works for ramps construction	Nb of ramps	1	5	0	0	0	0	5	0,95	5,95	
	Construction of access ramps to the Corubal river for livestock watering	Nb of ramps	22	0	110	0	0	0	110	20,9	130,9	
TOTAL 2.				2317	4523	475	55,5	179,5	7550	1434,5	8984,5	

Component 3: Knowledge dissemination of lessons learned on climate-smart agriculture and adaptation planning

		Total			В	asic cost pla	anning		Topics			
Activities	Unity	Quantity		An 1	An 2	An 3	An 4	An 5	HT Adaptatio n Fund	Тах	ттс	
1: Sustainable climate-smart agriculture practices and management is adopted in comparable regions of the country and disseminated to other lest African countries, contributing to resilience and development needs in those regions												
3.1.1: Development of knowledge management strategy	Nb	1	14	0	14	0	0	0	14	2,66	16,66	
3.1.2: Development and animation of project website	FF	1	10	5	1,25	1,25	1,25	1,25	10	1,9	11,9	
3.1.3: Manual and other materials on best practices and measures for climate-smart agriculture are developed	Nb	10	3	0	18	12	0	0	30	5,7	35,7	
3.1.4: Dissemination of results to other regions of Guinea- Bissau and West Africa	Sessions	6	16	0	0	0	48	48	96	18,24	114,24	
TOTAL 3				5	33,25	13,25	49,25	49,25	150	28,5	178,5	

Component 4: Project execution cost

		Cost per unit HT (x 1000		Basic	cost (1000	USD)		Total (X 1000 USD)					
Rubriques	Unity	USD)						нт		Тах			
			Year 1	Year 2	Year 3	Year 4	Year 5	Adaptation Fund	BOAD	Gouverment of Guinea Bissau	тс		
4.1.Investments													
4.1.1.Development / rehabilitation of local													
Rehabilitation of local (Bissau, Bafatà et Gabù)	FF	2,00	2,00					2,00		0,38	2,38		
4.1.2.Equipment and Logistics													
Office equipment	FF	3,00	3,00					3,00		0,57	3,57		
Laptop	Nbre	0,80	5,60					5,60		1,06	6,66		
Audio visual equipment (cameras, video projectors, CD-DVDs)	FF	2,00	2,00					2,00		0,38	2,38		
Purchase of vehicles	Nbre	45,00	90,00	0,00	0,00	0,00	0,00		90,00	17,10	107,10		
Rehabilitation of the LDCF vehicles Project	Nbre	5,00	10,00	0,00	0,00	0,00	0,00		10,00	1,90	11,90		
4.1.3. Financial management and auditing													
Audit des comptes	FF	4,00	0,00					0,00		0,00	0,00		
Sub-total 4.1.			112,60	0,00	0,00	0,00	0,00	12,60	100,00	21,39	133,99		
4.2.Recurring costs													
4.2.1. Salaries / Staff Allowance													
Project Coordinator	H/mois	2,00	24,00	24,00	24,00	24,00	24,00	120,00			120,00		
Technical Coordinator of the project - Expert Agronomist-Based in Gabù	H/mois	1,40	16,80	16,80	16,80	16,80	16,80	84,00			84,00		
Technical Coordinator Project Assistant - Climate Change Adjustment Expert - based in Bafatà	H/mois	1,40	16,80	16,80	16,80	16,80	16,80	84,00			84,00		
Specialist in Policy and Regulatory Development and Capacity Building	H/mois	1,40	16,80	16,80	16,80	16,80	16,80	84,00			84,00		

		Cost per unit HT (x 1000		Basio	: cost (1000	USD)		Total (X 1000 USD)				
Rubriques	Unity	USD)						нт		Тах		
			Year 1	Year 2	Year 3	Year 4	Year 5	Adaptation Fund	BOAD	Gouverment of Guinea Bissau	ттс	
Communication expert	H/mois	0,90	10,80	10,80	10,80	10,80	10,80	54,00			54,00	
Accountant, Procurement Specialist	H/mois	1,30	15,60	15,60	15,60	15,60	15,60	78,00			78,00	
Executive Secretary	H/mois	0,50	6,00	6,00	6,00	6,00	6,00	30,00			30,00	
Driver - Gabù	H/mois	0,40	4,80	4,80	4,80	4,80	4,80	24,00			24,00	
Driver - Bafatà	H/mois	0,40	4,80	4,80	4,80	4,80	4,80	24,00			24,00	
Driver - Bissau	H/mois	0,40	4,80	4,80	4,80	4,80	4,80	24,00			24,00	
cleaning women (Gabù)	H/mois	0,10	1,20	1,20	1,20	1,20	1,20	6,00			6,00	
cleaning women (Bafatà)	H/mois	0,10	1,20	1,20	1,20	1,20	1,20	6,00			6,00	
watchman (Gabù)	H/mois	0,10	1,20	1,20	1,20	1,20	1,20	6,00			6,00	
watchman (Bafatà)	H/mois	0,10	1,20	1,20	1,20	1,20	1,20	6,00			6,00	
4.2.2. Fees for Missions												
Project Coordinator	H/jour	0,05	0,75	1,00	1,00	1,00	1,00	4,75		0,90	5,65	
Specialist in policy and regulatory development and capacity building climate change and environment	H/jour	0,05	0,50	0,75	0,75	0,75	0,75	3,50		0,67	4,17	
Technical Coordinator of the project - Expert Agronomist-Based in Gabù	H/jour	0,01	0,40	0,80	0,82	0,82	0,81	3,65		0,69	4,34	
Technical Coordinator Project Assistant - Climate Change Adjustment Expert - based in Bafatà	H/jour	0,01	0,40	0,80	0,80	0,80	0,80	3,60		0,68	4,28	
Communication expert	H/jour	0,01	0,10	0,20	0,20	0,20	0,20	0,90		0,17	1,07	
Driver - Gabù	H/jour	0,01	0,40	0,80	0,82	0,82	0,81	3,65		0,69	4,34	
Driver - Bafatà	H/jour	0,01	0,40	0,80	0,80	0,80	0,80	3,60		0,68	4,28	
Driver - Bissau	H/jour	0,05	0,75	1,00	1,00	1,00	1,00	4,75		0,90	5,65	
4.2.3. Maintenance and Operation												
Operation Vehicle Gabù	Véhi/an	4,00	4,00	4,00	4,00	4,00	4,00	20,00		3,80	23,80	
OperationVehicle Bafatà	Véhi/an	4,00	4,00	4,00	4,00	4,00	4,00	20,00		3,80	23,80	

		Cost per unit HT (x 1000		Basic	cost (1000	USD)			Total (X 1000 USD)	
Rubriques	Unity	USD)						нт		Тах	
			Year 1	Year 2	Year 3	Year 4	Year 5	Adaptation Fund	BOAD	Gouverment of Guinea Bissau	ттс
OperationVehicle Bissau	Véhi/an	2,00	2,00	2,00	2,00	2,00	2,00	10,00		1,90	11,90
Office Supplies Bissau	an	1,00	1,00	1,00	1,00	1,00	1,00	5,00		0,95	5,95
Office Supplies Gabù	an	0,40	0,40	0,40	0,40	0,40	0,40	2,00		0,38	2,38
Office Supplies Bafatà	an	0,40	0,40	0,40	0,40	0,40	0,40	2,00		0,38	2,38
General expenses (water, electricity, telephone) Bafatà	an	0,60	0,60	0,60	0,60	0,60	0,60	3,00		0,57	3,57
General expenses (water, electricity, telephone) - Gabù	an	0,60	0,60	0,60	0,60	0,60	0,60	3,00		0,57	3,57
Sub-total 4.2.			142,70	145,15	145,19	145,19	145,17	723,40	0,00	17,75	741,15
4.3. Project planning, monitoring and evaluation											
4.3.1 Launching workshop and reports	FF	5,00	5,00	0,00	0,00	0,00	0,00	5,00		0,95	5,95
4.3.2 Acquisition of project management software	FF	5,00	5,00	0,00	0,00	0,00	0,00	5,00		0,95	5,95
4.3.3 Reinforcement of the Capacity of the PMU and project risk continuous evaluation	Session	1,20	1,20	1,20	1,20	1,20	1,20	6,00		1,14	7,14
4.3.4 Organization of Supervisory Meetings of the National Steering Committee (CNP)	Nbre	1,60	3,20	3,20	3,20	3,20	3,20	16,00		3,04	19,04
4.3.5 Working assignment of the UGP with the implementing entity (BOAD) in Lomé, Togo	FF	3,00	0,00	0,00	3,00	0,00	3,00	6,00		1,14	7,14
4.3.6. Field impact annual evaluation	FF	1,00	1,00	1,00	1,00	1,00	1,00	5,00		0,95	5,95
4.3.7 Mid-term evaluation of project actions	FF	9,00	0,00	0,00	9,00	0,00	0,00	9,00		1,71	10,71
4.3.8 Final evaluation of project actions and report	FF	10,00	0,00	0,00	0,00	0,00	10,00	10,00		1,90	11,90
Sub-total 4.3.			15,40	5,40	17,40	5,40	18,40	62,00	0,00	11,78	73,78
Total			270,70	150,55	162,59	150,59	163,57	798,00	100,00	50,92	948,92

H. Include a disbursement schedule time-bound

Table 33: Adaptation Funds disbursement schedule time-bound1 USD=500 FCFA

Scheduled Date	Upon Agreement signature	Year 1	Year 2	Year 3	Year 4	Total
Project Funds (X 1000 USD)	2891	4578	840	384	505	9198
Implementing Entity Fee (X 1000 USD)	143	140	200	190	108	781
Total (X 1000 USD)	3034	4718	1040	574	613	9979

Table 34: Schedule for implementation of the project

TOPICS		Years						
		2	3	4	5	6		
Component 1: Development of technical and institutional capacity to address increasing	climatic ris	sk in adapta	tion prac	tices and	planning			
Dutcome 1.1. Technical capacity of government and field workers to assess impacts, vulnerability and ada	aptation need	ds in extreme	ly vulnerab	le regions	enhanced	+		
Dutput 1.1.1. Socio-climatic vulnerability assessment for East Guinea-Bissau								
Dutput 1.1.2. Assessment of technical capacity building needs of ministries and field operatives for idaptation planning								
Dutput 1.1.3. Formulation of detailed intervention plan for pilot climate-smart agriculture actions and policies, procedures and guidelines related to climate change, gender and natural resources								
Dutcome 1.2. Farmers groups, private professionals of development, associations and government expert environmental, social and gender in practice (on-site) and adaptation planning	ts have integ	rated knowle	dge on clin	nate-smart	agriculture,			
Dutput 1.2.1 T Technical, organizational capacity building for identified target groups								
Dutput 1.2.2 Technical assistance and rural extension for subprojects								
Dutput 1.2.3 Formulation/Update of contingency plans for climate-risk management								
Dutput 1.2.4 Support for famers groups by the government technical experts for adaptation actions mplementation								
Dutput 1.2.5 Capacity building to prevent forest fires								
Component 2: Enhance the resilience of existing agricultural productive systems, includi	ng water c	ontrol				1		
Dutcome 2.1. Agricultural and livestock activities are climate-smart and contribute to sustainable increases	s in productiv	vity and enha	nce nationa	al food sec	urity	+		
Dutput 2.1.1 Development of lowlands to maintain agricultural production in drought periods						+		
Dutput 2.1.2 Construction of micro-dams for irrigation of rice, vegetable crops and livestock water supply						+		

TOPICS	Years							
TOPICS		2	3	4	5	6		
Output 2.1.3 Rehabilitation/improvement of soil and pasture productivity and small-scale investments into agriculture inputs, machinery and tools								
Output 2.1.4 Construction of drills/wells and ramps for improved livestock and domestic water supply and market gardens development								
Componet 3: Knowledge management of lessons learned on climate-smart agriculture and	Componet 3: Knowledge management of lessons learned on climate-smart agriculture and adaptation planning							
Outcome 3.1 Sustainable climate-smart agriculture practices and management is adopted in comparable regions of the country, and disseminated to other West African countries, contributing to resilience and development needs in those regions								
Output 3.1.1. Developement of knowledge management strategy								
Output 3.1.2. Creation and animation of project								
Output 3.1.3. Development of manual and other materials on best practices and measures for climate- smart agriculture								
Output 3.1.4. Dissemination of results to other regions of Guinea-Bissau and West Africa								

FINANCING PLAN

The project financing plan is as follows:

Table 35: Adaptation Fund disbursement plan

COMPONENT	TOTAL HT (1000 USD)	An 1	An 2	An 3	An 4	An 5
Component 1. Development of technical and institutional capacity to address increasing climatic risk in adaptation practices and planning	700	192,875	213,675	132,425	99,425	61,6
1.1. Development of technical and institutional capacity to address the increase of climate risk with the adaptation practices and planning	242,5	90,00	105,00	23,75	23,75	0,00
1.2. Farmers groups, private professionals of development, associations and government experts have integrated knowledge on climate-smart agriculture, in practice (on-site) and adaptation planning	457,5	102,88	108,68	108,68	75,68	61,60
Component 2: Enhance the resilience of existing agricultural productive systems, including water control	7550	2477	4258	580	55,5	179,5
2.1: Agricultural activities are climate-smart and contribute to sustainable increases in productivity and enhance national food security	7550	2477	4258	580	55,5	179,5
Component 3: Knowledge dissemination of lessons learned on climate- smart agriculture and adaptation planning	150	5	33,25	13,25	49,25	49,25
3.1: Sustainable climate-smart agriculture practices and management is disseminated in comparable regions of the country and other West African countries level	150	5,00	33,25	13,25	49,25	49,25
Component 4: Project execution cost	798	170,70	150,55	162,59	150,59	163,57
4.1. Investisment	12,60	12,60	0,00	0,00	0,00	0,00
4.2 Recurent cost	723,4	142,70	145,15	145,19	145,19	145,17
4.3. Monitoring and Evaluation	62	15,40	5,40	17,40	5,40	18,40
BASIC COST Adaptation Funds	9198	2845,575	4655,475	888,265	354,765	453,92
Project/Programme Cycle Management Fee charged by the IE	781					
TOTAL Adaptation Funds	9979	2845,575	4655,475	888,265	354,765	453,92

Considering that the road are very bad, it is paramount to put at the disponibility of the PMU, four wheel vehicules to ensure that the project can be successfully managed. Knowing that, the Adaptation Fund can't finance the vehicule acquisition, the implementation Entity (BOAD) will provide a grant of 100 000 USD to Guinea Bissau to finance two new four wheel vehicules for 90 000 USD and 10 000 USD to rehabilitate the two LDCF project vehicules. The table below presentes the disbursement plan of the BOAD.

Table 36: BOAD disbursement plan

COMPONENT	TOTAL HT (1000 USD)	An 1	An 2	An 3	An 4	An 5
Component 4: Project execution cost						
Acquisition of vehicles	90	90				
Rehabilitation of the LDCF Project vehicles	10	10				
Total BOAD	100					

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government²¹ Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

Mr. Viriato Luis Soares Cassama	Date: February, 3rd, 2017
National Program of Climate Change	
Ministry of Environment and Sustainable Development	
Tel: +245 96 678 40 46	
Email: Cassamavilus@gmail.com	

B. Implementing Entity certification Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (The National Communication to the UNFCCC, the National Adaptation Programme of Action (NAPA), the National Poverty Reduction Strategy Paper (PRSP) The Nationally Determined Contributions (NDC)) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

MBENGUE Almamy

Implementing Entity Coordinator - BOAD

Date: Date: February, 9th, 2017Tel. and email: Tel: +228 99 86 86 60 / 22 23 25 24Email: ambengue@boad.orgProject Contact Person: AMEGADJE Mawuli Komi

Tel. And Email: Tel: +228 90 04 62 54 Email: mawulikomi@yahoo.fr

^{6.} 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.

ANNEX

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Annex 1: Letter of endorsement



ADAPTATION FUND

Letter of Endorsement by Government

Government of Guinea Bissau

Bissau, 3th February, 2017

To: The Adaptation Fund Board C/o Adaptation Fund Board Secretariat Email: <u>Secretariat@Adaptation-Fund.org</u> Fax: 202 522 3240/5

Subject: Endorsement for Project "Scaling up climate-smart agriculture in East Guinea Bissau".

In my capacity as Designated Authority for the Adaptation Fund in Guinea Bissau, I confirm that the above 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 Guinea Bissau.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by Banque Ouest Africaine de Développement (BOAD) and executed by General Directorate of Environment/ Ministry of Environment and Sustainable Development of Guinea Bissau.

Sincerely.

Mr. Viriato Luis SOARES CASSAMA National Designated Authority (NDA) Tél:+245 95 5784046 cassamavilus@gmail.com Bissau, Guinée Bissau

Annex 2: Certificate of Environmental Compliance



Annex 3: Report on lessons learned







THE REPUBLIC OF GUINEA BISSAU======

SCALING UP CLIMATE CHANGE-SMART AGRICULTURE IN EAST GUINEA BISSAU

Lessons learned from GEF/UNDP Project "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" 00077229

Report

July 2016



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1. INTRODUCTION

1.1 Context

The West African Development Bank (BOAD) submitted the project idea "Scaling up climate-smart agriculture in East Guinea Bissau" (GNB/RIE/Agri/2015/1) to the Adaptation Fund Board Secretariat, on behalf of the Secretariat of State for Environment and Sustainable Development of Guinea-Bissau (SEAT/DGA) as national executing agency. The project concept note (PCN) was accepted for Full Proposal Development by the Fund's Secretariat in March 2016.

The PCN proposes to intensify the activities of the GEF / UNDP Fund for the Least Developed Countries (LDCF) Project entitled "Strengthening Climate Change Adaptation and Resilience in the Agrarian and Water Resources Sectors in Guinea-Bissau" (00077229) - in short resilience or LDCD project - to further promote integration of adaptation into development planning and build institutional capacity for climate risk planning in the country. Between April 2011 (signature of contract) and now the Resilience Project had initiated climate-smart agriculture pilot projects in 14 tabancas in the eastern savannah regions of the Gabú 'region'. The new project is aiming towards solidification and expansion of those experiences. This upscaling process refers to new activities in both the 14 original tabancas of the ongoing LDCF project and an additional ~26 tabancas in the 'regions' of Gabú and Bafatá, with total beneficiary target population for the new project foreseen at approximately 37,000 people in East Guinea-Bissau.

In this context, a problem encountered during the PCN review process was the lack of identified lessons learned and best practices from the LDCF project (e.g. effectiveness and efficiency of organizational structures, or of technological choices in the field), and how these could support the new project.

It can be understood, in part, based on the observation that the LDCF project is still under development, with finalization foreseen for the end of this year, making it impossible for the project proponent to refer to its main achievements comprehensively, or explain how the proposed project would build on it. However, "lessons identifying lessons on strengths or weaknesses in preparation, design, and implementation that affect performance, outcome, and impact" (OECD, 2002) provide an opportunity to avoid past mistakes and improve performance of the new project. This includes lessons learned both about procedural activities (especially project and financial management) and project activities at national (capacity building and policy integration) and local level (climate-smart agriculture subproject implementation).

The present report contributes to closing this knowledge gap.

1.2 Purposes of the study

The objective of this study is to identify and analyze the relevant lessons learned from the GEF/UNDP LDCF "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" (00077229) project implementation, in order to support the Full Proposal development of the "Scaling up climate-smart agriculture in East Guinea Bissau"

(GNB/RIE/Agri/2015/1).

Specifically, this report aims to respond to these two questions raised by PCN reviewers of the Adaptation Fund Secretariat:

- Question 1: What have been the main achievements of the LDCF funded project at the end of the project, and has its implementation has resulted in opportunities to achieve higher cost-efficiency in the investments in the proposed project; and
- Question 2: How will the project make use of the lessons learned and best practices from the LDCF project?

Within the context of these questions, the lessons learned include the "identification and analysis of constraints, opportunities, and approaches to be considered for the new Adaptation Fund Full Project, focusing on all relevant aspects (technical, environmental and social, organizational, institutional, legal, financial, etc.) that enabled the implementation of project activities and the achievement of the expected results under the LDCF project" (translation from TOR by author).

Furthermore included are descriptions of best practices for adaptation to climate change in the Gabú LDCF project region, focusing on projects that have proven their adaptability to adverse effects of climate change and climate variability, soil management and appropriate management of pesticides.

1.3 Scope and methodology

This study on lessons learned is undertaken in support of the Full Proposal development of the project "Scaling up climate-smart agriculture in East Guinea Bissau" (GNB/RIE/Agri/2015/1). This report aims to answer the two questions posed in section 1.2. <u>It does neither constitute a final evaluation of the LDCF project nor a M&E report of climate-smart agriculture projects</u>, and therefore does not give a complete validation of the project's development strategy or its intervention logic (UNDP, 2009). Instead, this study can be seen as a rapid assessment of the LDCF project, based on a review of the project documents made available, a limited number of semi-structured interviews with the project team, and participant observation in short field visits.

Under the term 'lessons learned' this report understands 'Generalizations based on evaluation experiences with projects, programs, or policies that abstract from the specific circumstances to broader situations, [which] frequently, lessons highlight strengths or weaknesses in preparation, design, and implementation that affect performance, outcome, and impact' (OECD, 2002).

Particular focus of this report is on responding to these two questions: (1) what worked in the project; and (2) what could be improved in the project. These questions are responded to both in terms of project design and formulation and at the project implementation level.

In order to organize the research for this report a simple matrix was developed to methodologically assess the relevant information pertaining to lessons learned:

- <u>Left column:</u> slightly adapted set of research questions from the LDCF project's mid-term evaluation (Quese and Jandi, 2013) that inquire about the most relevant results and lessons learned in terms of project design and formulation and at the implementation level;
- <u>Middle column</u>: the most recent status of the LDCF project pertaining to the particular research question or set of research questions; and
- <u>Right column</u>: summary of lessons learned and best practices regarding to the particular research question/set of research questions and based on the observation of the actual status of the project in relation those same questions, and how lessons could contribute to the new Adaptation Fund project.

This work was divided into two distinct parts: (i) a five-day visit to Guinea-Bissau for data collection and interviews, with four days in the capital Bissau and a one-day Gabú field visit (20–24 June 2016); and (ii) five days for writing up of results into a report and revisions. During his stay in Guinea-Bissau the consultant met with the relevant institutions involved in the implementation of the LDCF project in the capital of Bissau, the Project management unit (PMU) members at Gabù, and beneficiaries at project implementation level in Gabú region. Field trips were organized by Global Lead together with LDCF project coordination. Additional data collection and analysis with project target group and LDCF project was carried out in order to complement information received during two earlier missions to Guinea-Bissau in 2015 (July 2015, and November 2015 by Global Lead). The semi-structured interviews in Bissau and Gabú were held in Portuguese where possible, and carried out with help of translators in Gabú where local dialects were spoken.

Two important limitations restrict the drawing of lessons learned from the ongoing LDCF project:

- <u>Access to information:</u> internal project documents of the LDCF project annual technical and financial reports, project memos, other – could not be consulted for the identification of lessons learned, given restrictions by UNDP Guinea-Bissau (LDCF implementation agency) regarding the dissemination of these documents (information provided by LDCF project coordinator Mr. Viriato Cassama, on 21 June 2016).
- 2. <u>Data availability:</u> up to date not comprehensive Vulnerability Reduction Assessment (VRA) (see LDCF PRODOC) has been undertaken to understand the contributions of the small-scale project interventions at local scale to climate change adaptation, including the identification of possible best practices for adaptation, their adaptability to adverse effects of climate change and climate variability, soil management and appropriate management of pesticides. Therefore, the identification of best practices for adaptation to climate change at the *project implementation level* in the Gabú 'region' is limited. To cope with this limitation, Global Lead did preliminary work with members of project management unit and the beneficiaries to have the key results of LDCF project. This report is drafted in Portuguese to be sure that it is very comprehensive for the Bissau Guinean. The report in Portuguese is attached to the present report (see annex 1).

2. BRIEF PRESENTATION OF INTERVENTIONS: PROJECT AND DEVELOPMENT CONTEXT

The "Strengthening adaptive capacity and resilience to Climate Change in the Agrarian and Water Resources Sectors in Guinea-Bissau" – or short Resilience Project – is an ongoing initiative of the Government of Guinea-Bissau, with support from UNDP and the Global Environment Fund's (GEF) Least Developed Countries Fund (LDCF), at a total volume of US\$ 4.200.000. Project duration was originally set from 2011 to 2015, but a no-cost extension has been granted and project termination is now foreseen of end of 2016.

Its overarching objective is to *support the country's water and agricultural sectors in becoming more 'resilient' to current climatic variability and longer term climate change impacts*, with measures and activities aimed at (i) integrating adaptation needs and climate risk into key national policies, plans and programs, in order to allow for integrated water and agrarian resource management under climatic change; (ii) implementation of cost-effective small-scale adaptation interventions targeted at family farmers located in 14 tabancas of the country's eastern savannah Gabú 'region', in the 'sectors' Pitche and Pirada (each 7 tabancas) which suffer from increasing drought and flood risk, particularly related to improved water and drought management, and increasing productivity and income in agriculture (seed banks, bio-fertilizer, diversified planting techniques, wider market access etc.) and livestock raising (smaller livestock keeping, reducing water-related conflict, construction of wells, etc.) via participatory trainings and technology deployments; and (iii) dissemination of lessons learned and best practices from activities into national plans and policies, including the development of a Rural Climate Change Forum (RCCF) and establishment of a basis for the replication of all site level activities in the future (PRODOC, 2011).

In this, the Project uses the term 'resilience' as creating 'resistance to shocks and stresses' and 'developing sets of skills and behaviors needed to overcome challenges by both anticipated and unanticipated climate-induced stresses' (PRODOC, p. 41). This puts emphasis on technological modernization of smallholder agriculture and livestock raising in the region, but importantly also and capacity building measures, particularly investments into social and human capital for project beneficiaries, from local to institutional to systemic levels. The project intervention logic is summarized in Box 1.

In this context, the Resilience Project has been developed in hindsight of removing these barriers that impede successful resilience building:

- 1. Key stakeholders have limited capacity to plan and respond to climate change risk and to incorporate adaptation measures in the conceptualization and implementation of development frameworks;
- 2. Limited capacities at local intervention level to implement new measures and utilize improved technologies in agriculture and water resource management, increasing vulnerability of already vulnerable communities as a result of climate change; and
- 3. Climate change risk analysis in Guinea-Bissau is still at very early stages and poorly quantified at a significant scale, both spatially and temporally. Furthermore, information is not widely available that would encourage a shift away from the 'reactive & ad hoc' climate change response paradigm towards more 'anticipatory & deliberative' practices (PROCOC, 2011).

Box 1: Intervention logic of LDCS project

First, the project's beneficiary communities will have greater knowledge and understanding of climate issues. They will have access to improved information on future climate predictions tailored to their needs, and will be able to interpret this information practically to help them make decisions relating to their own livelihoods. Secondly, stakeholders at the local level will correspondingly be able to apply improved practices with respect to water and agricultural resource management: practices that will be particularly useful in the context of a changing climate. These include examples of: water conservation techniques, water management, improved livestock management and livestock choices, more appropriate, resilient crops and cropping techniques, appropriate agroforestry techniques, improved seed banks, crop storage and protection, and safety nets and stimulation of livelihood diversification through micro-grant schemes and other group activities. Thirdly, an essential corollary to these schemes is a supportive and enlightened institutional environment. Finally, by project completion, critical capacity will have been created through training and developing a strong cadre of national experts and advocates - people who understand the climate stakes for Guinea-Bissau's future and can continually influence policy development processes. Considerable amounts of finance are expected in the future relating to climate change in Africa. Thus it is essential that Guinea-Bissau has the national capacity to obtain, absorb and distribute funds and investment for their greatest effect in ensuring food and water security for its people. With this longer-term perspective in mind, capacity development on climate change will provide significant ongoing benefits for the nation. The project will consistently invest in documenting information, analysis, experiences and lessons, particularly those lessons that will be extracted 'on-the-ground' from site-level implementation, as well as directly investing in capacity building and training. This will ensure the dissemination of knowledge, practices and project results to a wide range of audiences.

Source: PRODOC (2011).

Key institutional partners in the project are NGOs, public sectors and private entities, especially related to the knowledge and technology transfers in agrarian and water sectors.

3. ACHIEVEMENTS AND WEAKNESSES OF THE PROJECT APPROACHES: KEY FINDINGS AND LESSONS LEARNED

The following matrix summarizes the identified key findings from the interim review of the LDCF project: first regarding program design and implementation, and secondly, at the implementation level. These lessons learned will be implemented concretely should the current proposal be accepted for funding.

Research question	Lesson(s) learned		
	LDCF project context and outcomes What has worked and What could be improved?	Best practices proposed for the new project	
3.1 Program design and formul	ation		
3.1.1 Quality and pertinence of	the project process formulation		
3.1.1.1. Is the project's logical framework sufficiently clear and appropriate, including indicators with baseline and target values, and have activities and products of the project been clearly related to the impacts of the project?		framework and theory of change (see question 10.2). Field intervention activities should be enhanced in an updated logical framework. This is discussed in detail under questions 8-10.	
	 It is unclear in the heid interventions in ked to the logical framework (e.g., building of small dams, dissemination of organic fertilizer, creation of contingency plans) in isolation and without market development are sufficient to support resilience building at local level, or is they would fit under a general climate-smart agriculture framework (see questions 8-10). It is also unclear if conservation and sustainable resources use activities of the LDCF project fit the logical framework. (For more information see questions 8-10 below). Several PRODOC project <i>objective level</i> and <i>outcome level</i> indicators were not considered SMART (specific, measurable, achievable, relevant and time-bound). An 	 Project indicators for the Adaptation Fund project proposal need to be designed more carefully in order allow for consistent M&E of the project. The mid-term evaluation has given examples for changing indicators of the LDCF project (p. 10-11). These changes are relatively easy to implement. 	

	example: <i>objective level indicator 2</i> ("Government budget and international funding allocated to managing climate change risks increased") was not formulated as an indicator, but as an effect, and was thus considered unspecific. As a consequence this indicator could not be reasonably measured in the LDCF project, compromising M&E efforts in the project.	
3.1.1.2. Are project activities and expected outputs and outcomes, as defined in the Project Document (PRODOC), relevant to the needs and priorities expressed by the beneficiaries of the project?	 What has worked: Institutions and experts interviewed during the mid-term evaluation confirmed that project activities, expected outputs and outcomes are relevant to the needs and priorities of the beneficiaries. It was specifically noted that planned project activities were aligned with women's needs. The review of literature undertaken for PCN development further highlighted this observation. LDCF project activities addressed key vulnerabilities in agriculture and water resources management, and thus contributed to immediate and longer-term development and resilience needs of extremely vulnerable farmers. As such, the project was in line with the recommendations of the UNFCCC Nairobi Work Programme and the best available scientific evidence on climate change impacts, vulnerability and adaptation in agriculture, water resources as well as food security. 	 Lessons learned: Those work activities and expected outputs of the LDCF project that focus on field interventions for smallholder farmers and extremely vulnerable groups (elderly, women, etc.) provide a sound basis for developing the new project's logical framework and intervention logic. (Suggestions for improving the intervention logic are presented in questions 8-10 below.)
3.1.1.3. Was project formulation conducted in a timely fashion?	 What has worked: Project formulation was considered timely. Start of the project was delayed by the coup d'état in 2012 and small delays in the contracting between the Guinea-Bissau and UNDP. What could be improved: Minor delays at project start affected some field activities. For example, it was assumed that the UNDP Community-Based-Organizations' Support Project in 	• The possible linkages and interactions with other projects or programs should be realistically assessed at project start in order have a clear picture of what these initiatives can provide to the new Adaptation Fund project, and what not. Such an assessment may reduce possible conflicts at the beginning of the project.

3.1.2 Project relevance to the po 3.1.2.1. Are the project and its activities aligned with national priorities?	 Gabú Region (OCB) and the African Development Bank project PRESAR would support quality seeds to the LDCF project. But these projects were already ending their activities during initialization of the LDCF project, and therefore seeds could no longer be supplied. Dilitical context of Guinea-Bissau What has worked: The project supports relevant government policies and plans including the Poverty Reduction Strategy (2011-2015) and NAPA priorities, as well as priorities of other ministries and agencies, such as those of the General Directorates of Water Resources, Agriculture or Livestock. Partnership protocols signed during LDCF project implementation highlight common objectives and possibilities for collaboration clearly. What could be improved: The identification of project initiatives outside government may have been insufficient, as this has been highlighted during the review process by the Adaptation Fund. 	 Lessons learned: A thorough identification of relevant projects in the project area should be undertaken in order to identify overlaps and possibilities for collaboration. This has been done already during Project Concept Note development. This includes partners that are not directly involved in the project activities and to other initiatives that may occur in the area new Adaptation Fund project, as well as strengthening partnerships with other interventions that may occur in the same areas as the Adaptation Fund project, and which could complement the activities initiated by the new project (see also recommendations #14 and #16 of mid-term evaluation). The Intended Nationally Determined Contributions
3.1.3 Status of risks and assum	Adaptation Fund. ptions formulated in the PRODOC	 The Intended Nationally Determined Contributions (INDC) may be taken into account the new project
3.1.3.1. Were the assumptions and risks identified during project formulation relevant and clearly in the project identification sheet and the project document?	What has worked: • In general assumptions and risks identified in the PRODOC were relevant and clearly identified. Two identified risks ("bad financial management and corruption undermines project development" and "exclusive focus on climatic change reduces interest of target group") did not materialize during the project. What could be improved:	 Lessons learned: Identified risks and risk hypotheses were relevant and clearly identified. Therefore, the new Adaptation Fund project could rely on updated risk hypotheses based on LDCF project assumptions. Updated risk hypotheses for the Adaptation Fund project should take into account the learning on risks from the LDCF project. These alterations are easy to implement for the project entities and may improve

3.1.3.2. Were risks and assumptions always validated and did new risks appear throughout the project?	 Not all difficulties that eventually arose during LDCF project development were initially anticipated in the PRODOC (see questions 3.2 and 3.3 below). These included (i) in part ineffective participations by key policy stakeholders, for example, DG Agriculture in Gabú (Report Mangla), and despite signed MOU with SEAT; and (ii) in part difficulties with NGO, especially regarding community mobilization and non-payment to local personnel. What has worked: Risk validation was undertaken by the project team throughout the project risk validation seems to have been carried out on an ad-hoc basis with no continuous risk assessment, such as recommended by the midterm evaluation team (see question 3.3.), although those new risks do not seem to affected overall project outputs. For example, two coup d'états in April 2012 and 2015 led to partial embargos to the country, including restrictions on financial resources, but still the project seems to have continued quite firmly in developing its activities. 	 overall managerial capacity of project team, including adaptive management. <u>Lessons learned:</u> Based on the review of the project documents and interviews it does not seem that risk appreciation and validation was insufficient to cause serious problems for LDCF project development.
3.1.3.3. Has a risk management	What has worked:	Lessons learned:
system been implemented? And did this work when new risks appeared?	• In general new risks did not affect project development: next to political uncertainty (see question 3.2) problems arose in a partnership with one nat'l NGO, whose contract with the project had to canceled just a few months into the project due to a lack of managerial capacity and possible misuse of allocated funds. (For example, local community mobilizers were paid, but did not show up for work.) As a consequence the project team diversified partnerships with NGOs/CBOs in order	• The project managed to maintain operations despite difficult political situations and other emerging risks. This indicates that political risks were sufficiently anticipated, and that risk management was appropriate under the circumstances.

 to guarantee sustainability of interventions at local community level. These examples show that that the project management unit was able to react to new risks, also taking potentially unpopular measures. What could be improved: Continuous risk assessment: As of December 2013, no system for risk management was set up for the LDCF Project. On this basis the mid-term evaluation suggested to incorporate a risk assessment matrix in the quarterly and annual reports and complete Risk Log systematically on an annual basis during the preparation of PIR (Project Implementation Report). A risk not anticipated was inaction on behalf of other project partners at the policy level, despite signing of MOU, affecting particularly planned water infrastructure works of the project which were essential for community resilience building. However, it is unclear how this negative development affected the effectiveness of adaptation interventions at the community level – given the lack of an effective M&E for field interventions (see question 1.1). 	 response category (emergency plan, monitoring or other) and changes in risk (mitigated, stable, increasing, problem) and date of risk identification. Risk hypotheses with regards to political risk will need to be developed with care, given the continuing political instability in the country. Following the recommendations of the LDCF project mid-term evaluation, it is suggested that a continuous risk assessment system should be implemented. Risks should be presented annually in the PIR (Program Implementation Report) through a risk assessment matrix, including possible (alternative) mitigation actions. The project will aim to implement a continuous risk assessment should the Adaptation Fund decide to fund this PCN. In tri-semester reports risk evaluation matrix should be incorporated, according to type (environmental, financial,
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3.1.4. Project management structures and contribution to effective and efficient project development			
3.1.4.1. Are annual work plans	What has worked:	Lessons learned:	
coherent and of good quality?	 PTAs (Annual Work Plan) were judged to be of good quality, according to the mid-term evaluation. (This author did not have access to these reports which are internal to the project management unit and UNDP.) <u>What could be improved:</u> Submission of plans was sometimes delayed, causing several delays in project development. The LDCF project is implemented on the basis of PTA (Annual Work Plan) and quarterly programs. PTAs require validation from the Project Steering Committee (PSC) for implementation to proceed. This has caused several problems: difficulty to gather PSC members (consisting of representatives of key institutions, beneficiaries and local and regional authorities), lack of interest of the parties concerned, and frequent changes in the institutions that make up the PSC. 	is suggested that PTAs should be submitted earlier, and also discussed in advance with the Project's steering committee. Development and submission of status reports: necessary to allow for early validation, thus enabling provision of funds and start of activities early in the year. This particularly includes putting into place annual procurement plans which detail purchases and can speed up administrative and financial procedures. For this the Project Management Unit personnel for the Adaptation Fund project should be recruited by call of application, to be trained on fiduciary, environment and social standards.	
3.1.4.2. Has governance of the	What has worked:	Lessons learned:	
project been effective and did it provide sufficient strategic directions to project development?	 In general governance of the project been effective and did provide sufficient strategic directions to project development. This included a project steering committee (PSC) including participants from civil society and key line ministries. <u>What could be improved:</u> The PSC did not have the role laid out in the PRODOC regarding LDCD project implementation and strategic guidance. Meetings were infrequent and key stakeholders did not participate or participate unfrequently. In general, the project team consisted of experienced and committed people, but their dispersion created for 	 The overall governance structures of the project should be improved, in order to strengthen overall effectiveness and strategical guidance for the project. The Project Steering Committee (PSC) should contribute to the submission of status and other reports through continuous monitoring and more frequent meetings. The interim report specifically calls for a strengthening of participatory and consultative mechanisms in this respect, which the project team should strive to realize under a new project. Given the complexities of the LDCF project (and the complexities of the new project, which will likely invest 	

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	communication and project activity planning. The		and new motivated staff. One option to increase staff
	training of the project team in specific areas should		capacity would be to look for young Guinea-Bissau
	receive more attention from the start of the project to		experts with university degree and curricula in
	allow better serve beneficiaries.		adaptation project management and development that
•	Int'l experts to support the project development were not		are currently localized outside the country, and aim to
	always hired as planned, or did not contribute to the		bring these people back to the country via the project.
	project as planned when hired. For example, the CTP		This motivated staff personnel could increase the
	recruited to fulfill overall a leading function in the project		project impact of the new project. Strong international
	was incapable to support the project team, including		contacts of LDCF project coordination may support
	lack of Portuguese and French language knowledge.		this.
•	Governance of the ground team was hampered, as the	•	International consultants could help in increasing the
	ground team had no official responsible for ensuring		performance of the project team, even if hired for short
	coordination and liaison with other local actors.		periods of time. However, the hiring process of int'l
	Communication problems arose also as local partners		specialists should be reassessed and undertaken with
	did not interact with local staff, but spoke directly with		strict rules. It is suggested that UNDP in Guinea-
	Bissau. The local project team in Gabú did not have a		Bissau supports the hiring process of a new
	responsible coordinator, nor sufficient financial means		Adaptation Fund process, and that the consultants
	to assure coordination and collaboration with other local		hired stay in Bissau with the project team in the office,
	interventions. Overall conditions improved during LDCF		especially in the case of long-term specialists.
	project development, but similar errors may occur in	•	Local staff needs to have resources to be able to allow
	case of a Bafatá office.		them keep up administrative management and
	Financial resources for Bissau and field staff in Gabú		technical activities in a satisfactory manner, with
	were often insufficient to implement work activities given		stringent financial management in place. The mid-term
			evaluation suggested an annual procurement plan
	bureaucracy linked to procurement processes and		
	other. In direct response a project account was opened		which details planned purchases to speed up the
	in 2013 in order to allow SEAT to access funds for the		administrative and financial procedures is a good idea
	trimester and facilitate quick payments. But contrary to		to facilitate payments. Other mechanisms to facilitate
	what had been expected, the making of payments		payments should be discussed with the Adaptation
	continued to take much time, and many activities could		Fund and other partners at the beginning of the
	have been terminated earlier if it weren't for the lack of		project. It would be an idea to think now about
	resources. Transport possibilities (including 4x4) were		procurement plans could be developed jointly in order
	limited for project development.		to reduce delays and problems. It is likely that the
•	Capacity building of the local team should receive		project donor office needs to provide support/facilitate
	specific attention: it was planned to contract specialists		and better administrative and financial procedures for

3.2 Implementation level	in specific knowledge areas, such as adaptation, agronomy, agro-pastoral systems, community development, climate information etc., but hiring did not occur.	this. In this the project team could be act quicker and be more proactive (pp. 19-20).
3.2.1 Functionality of project pa	rtnershins established	
3.2.1.1. To what degree have	What has worked:	Lessons learned:
partnerships realized for project development been established with relevant stakeholders active in the country and region targeted by the project?	• The LDCF project established relevant partnerships with national partners (through six partnership protocols) and regional and local government. Further partnerships were established with nat'l and local NGOs. In general, these partnerships were effective and helped project development.	 Existing partnerships with NGOs should be maintained and strengthened, and partnerships with CBOs should be broadened in the new project in order to ensure sustainability and a more effective replication and diffusion of activities and results.
	 What could be improved: Despite successful signing of partnerships agreement the outcomes of these agreements were not always realized. As mentioned above, in one case a contracted NGO did not deliver the contracted services, and thus had its contract terminated. In other cases the power of the project team is more limited: in case of the six partnership protocols not all partners did engage as promised, e.g. affected the delivery of water works in the project region. 	
3.2.1.2. To what degree do	What has worked:	Lessons learned:
national, regional and local government institutions participate actively in the project implementation? To what degree are other institutions (other than government) participating in the project?	• Local and regional government institutions participated in the project, leading to the Gabú Region Development Plan and similar plans for Pitche and Pirada sectors. In general these plans establish important connections between water and agricultural sector development and climate change adaptation. Further important regional and local contributions were harnessed through the implementation of the Rural Climate Change Forum	 Social mobilization – The RCCF has been very important for this kind of mobilization, it has been an 'open school', a very efficient mechanism, and the new Adaptation Fund project should invest in this forum also for the Bafatá region, as well as build capacity at the local tabanca level. The project should aim to extend and strengthen partnerships with CBOs to ensure durability and more

(RCCF) which consists of relevant stakeholders,	effective dissemination and replication of activities and
including particularly vulnerable groups such as elderly	
and women.	followed in a possible Adaptation Project. Problems of
• Strategic partnerships were strengthened through	forest fires - vigilance committees first attempt to stop
project contributions to the Carta de Política de	this; but the project did not accompany these
Desenvolvimento Rural (CPDA), Programa de	committees very well, and voluntarism has cooled off
Investimento Agrícola (PNIA), Plano de	significantly again. These committees will likely need
Desenvolvimento da Pecuária, Esquema Diretor de	more supervision and contributions from the local
Água e Saneamento, Documento de Estratégia	project staff - which probably requires the
Nacional de Luta Contra a Pobreza (DENARP), Plano	development of a strategy.
de Desenvolvimento Regional de Gabu (PDR), Plano	• Ways to turn partnerships and partnership protocols
de Desenvolvimento Local de Setor de Pitche and the	more effective should be discussed with partners, e.g.
Plano de Desenvolvimento Local de Setor de Pirada.	through budget support, stronger control, or re-
These collaborations were done via workshops with	strengthening of Project Steering Committee which
active participation from key line ministries, including	has been used unfrequently.
also the Ministérios de Interior (Serviço de Proteção	Participating NGOs should provide work and financial
Civil, and also Finanças (Alfândegas)).	plans, use bookkeeping and undergo monitoring and
	evaluation (M&E), including financial monitoring -
What could be improved:	experiences from German Liaison Office in Guinea-
• The signing of partnership protocols did not always	Bissau with NGOs and small-scale project
result in concrete action by partners. This was attributed	development shows very little project failure (1 project
to the political instability in the country and frequent	
changes in key ministerial positions of partner	
institutions. As such, some partnerships left to be	project development in the country. Furthermore, the
desired, for example the DG Agriculture and Water	
Works Agency do not deliver, negatively affecting	partnerships with NGOs and to define, in a
project implementation.	consultative manner with NGOs partners, and with the
 Integration of community-based organizations (CBOs) 	support from the UNDP monitoring and evaluation
could have been more pronounced: CBO engagement	service, a tool for monitoring their performance in
has been found limited due to organizational	terms of mobilization in the villages. Where
weaknesses of these bodies (see also question 2). An	collaborations worked out fine, it was found that the
example is the participation of environmental vigilance	contracts between project team and NGOs/CBOs had
committees which started off well, but later saw a drop	well defined plans and responsibilities. Otherwise,
in participation and motivation. As a result, illegal	training and using dedicated staff for NGO/CBO
in participation and motivation. As a result, liegal	training and using dedicated stall for NGO/CDO

3.2.2 Adequacy of monitoring a	 hunting or slash-and-burn agriculture may have continued in the region where the role of the environmental vigilance committees was to contribute to reducing these. On the side, it has to be considered that, in general, the process with NGOs and rural technicians has been very good and essential; about 85%-90% of planned deliverables were achieved, which is a very relevant figure. Strategic partnerships and documents were not well disseminated to core users, which would be necessary to reinforce capacity building in resilience and adaptive capacity in the agriculture and water sectors at the policy level. 	• Work with NGOs will require strict supervision, both in
3.2.2 Adequacy of monitoring a		
3.2.2.1. A monitoring and evaluation plan containing SMART indicators has been set up and assessments are conducted during the implementation of the project?	 What has worked: Monitoring and evaluation indicators were identified in the PRODOC initially, and then reviewed at project inception stage. This start-up workshop was welcomed by stakeholders and helped provide project information to partners and stakeholders, to clarify certain activities and certain indicators. What could be improved: No M&E plan seems to have been developed, despite being planned for in the 2013 PTA. This has turned the assessment of effectiveness of measures and activities very difficult. In addition, project M&E indicators were not consistently SMART, and baselines were not established for any indicator (see 1.1.). Furthermore, until 2013 (mid-term evaluation) the project management team lacked clear procedures on including the frequency of data collection missions, sharing responsibility for collecting data for each indicator, identification and capitalization of best 	Reduction Assessment – as key indicator, but no baseline has been established in the LDCF project. As mentioned already, the lack of capacity to show impact will have direct consequences on leveraging additional finance in the future, and also leaves doubts regarding the impact and cost-effectiveness of measures. In this context SMART indicators and reference/baseline values are particularly relevant to measure project success of climate-smart agriculture interventions. These will include measuring increases in productivity, resilience (adaptation), reduction or removal of greenhouse gases (GHG) (mitigation), and enhancing achievement of national food security and development goals.

3.2.2.2. Have M&E results been utilized for adaptive management of the project?	 practices, etc. In response, UNDP held two training workshops in results-based management monitoring which allowed for correction of some flaws in information production and evaluation process. However, the training does not seem to have been followed up with practical responses in M&E activities and planning (2014, 2015 and 2016). Important: For objective level indicator 3 ("Scores of UNDP's Vulnerability Reduction Assessment (VRA) to be applied upon inception, mid-term and end-of-project in project-site communities") neither a baseline was defined at project start, nor a follow-up monitoring was undertaken. In this context existing reporting procedures on productivity increases, participation in events, etc. were judged to be inadequate as an indicator for impact of field interventions. As a consequence, the contribution of the project to local (community) vulnerability reduction is currently difficult to qualify and quantify, and this will likely affect capacity to obtain further financing in the future. (The lack of M&E efforts and lessons learned has been criticized strongly by the reviewer of the current Adaptation Fund PCN.) What has worked: No consolidated M&E system has been installed in the project, but project coordination submitted annual and trimestral reports in which issues pertaining to project operational planning, steering, management of processes, learning and strategy design were discussed. 	 project is one option, especially those which have experience in community-based adaptation (CBA) or ecosystem-based adaptation (EBA). Another option could be collaborations with universities/research institutes which could do M&E at low cost and provide research assistant help to carry out field work during project. This cooperation should also include UNDP Guinea-Bissau as a key supporting actor. Lessons learned: A new project under the Adaptation Fund should invest strongly into a consolidated M&E system for the project, in order to facilitate adaptive management. Strengthening capacities in this regard will likely have benefits for overall project coordination.
	What could be improved:	
	• The mid-term evaluation noted that report submitted lacked clarity, with a focus on presentation of data on results and outputs, but not adaptive management. In	

3.2.2.3. Are stakeholders being consulted in the implementation?	 turn, adaptive management of the project might have benefitted from a more systematic reporting on steering, management of processes, learning and strategy design issues. However, it is unclear if a stringent M&E system might have been implemented by the project team with current resources – with the project team already engaged in many activities and otherwise limited resources. Nevertheless, use of adaptive management is a process that should be strengthened during project development, but may require support from outside consultants and/or UNDP. What has worked: The RCCF regularly brought together different stakeholders active in the region, enhancing the dialogue between these stakeholders around the aspects of climate change and emergency response. The level of involvement of different line ministries was judged positive, especially were MOUs were signed. Communities, including women, were involved and consulted in all activities implemented. What could be improved: The communication, collaboration and dissemination of information with institutional partners which are not directly involved in the implementation of project was judged inadequate by some project partners, and could be strengthened to maximize overall project outreach. 	institutional partners should be strengthened. This is with regards to Partnership Protocols and their implementation (see above).
3.2.2.4. Equity issues and gender equality are taken into account and included in the implementation of the project?	 What has worked: Gender and equity dimensions have been incorporated into project activities relatively strong. Women and women's groups are well integrated at local level, having benefitted capacity building courses on different agricultural technologies, water management, health and animal feed (women's participation in these courses 	 Lessons learned: The new project should make efforts to better communicate links between discussions with women, their opinions, the activities developed together with them and possible outcomes, and the evaluation by women. Gender aspects should specifically also be incorporated into the M&E system.

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	 ranges from 30% to 50%). Specifically the project encourages women's participation in the context of male-dominated rural communities, and disseminates project activities specifically focused at women (e.g., horticulture and gardening in which men show little interest in the project region). In some outputs produced by the project, such as contingency plans, there are sections showing the conversations and needs identified specifically by women in preparation of project activities. Gender sensitivity of community forest protection should be studies more closely, given that male household members are largely responsible for slash- and-burn agriculture. Initial vulnerability assessment is necessary in order to identified specifically by women in preparation of project activities. Gender and equity concerns have also been integrated into the project's communication strategy, where climate change is discussed in linkages to human and women's rights, women's participation, AIDS, biodiversity, etc. are clearly integrated. Community radio programs support this outreach strategy. Functional alphabetization manuals now also integrate this knowledge, based on a MOU with the Instituto Nacional de Desenvolvimento da Educação (INDE). The project thus also contributes to cultural change in the country.
	 What could be improved: The documentation of the project impact on equity and gender issues is insufficient, which can be linked to lacking M&E efforts and baselines in the project (see 1.1, 6.4.). In some cases the benefits of gender were not fully realized, e.g. regarding biodiversity conservation and environmental services it is often the male members of a household that deforest and do slash-and-burn agriculture, and strategies should be specifically designed to address this problem. Not in all cases the most vulnerable populations were really addressed (some populations were not really the

	most vulnerable).	
	• The current project team seems to have few female	
	members, and no direct gender specialist.	
3.2.3 Effectiveness of project in		
		Lessons lesmad
3.2.3.1. What has been the progress in achieving the objectives and effects of the project so far?		 Lessons learned: The construction of water infrastructure needs to start early in the project. It is only that way that farmers can learn to use and maintain more complex 'hard' infrastructure during project execution, with almost immediate benefits for households, agriculture and livestock. In the current LDCF project, seemingly due to operational rather than technical problems, small dams and wells are only implemented this year, implying there is (i) no direct connection to the already developed field work and (ii) no way for famers to learn use this infrastructure as the LDCF project will terminate end of this year – this would, however, change if a new project, e.g. through the Adaptation Fund, will commence, building upon the LDCF outputs.

	 forage crop for animal consumption, installation of demonstration fields, building of veterinary pharmacies, introduction of improved poultry, goat and sheep breeds (more resilient to heat stress), creation of cereal banks, implementation of seed banks, construction of waterholes and wells, contingency plans against flooding in villages, among other. Outcome 3 ('Lessons learned and best practices from pilot activities are disseminated and integrated in national plans and policies'): knowledge and institutional capacity has been strengthened, e.g. via technical and human resources capacity building of the National Institute of Meteorology, or the elaboration of an agroclimatic vulnerability maps for the Gabú region, as a direct result of identified knowledge gaps. 	
	What could be improved:Water infrastructure needs to be better integrated into	
	the subproject development at village level. This is discussed more below.	
	 As noted above, it is unclear if subproject activities contribute to resilience building – given that no baseline has been established and no systematic M&E undertaken, the contribution those activities have for family farmers cannot be clearly analyzed and affirmed. 	
	 A related point to the subproject activities is that, albeit having a focus on agricultural practices, livelihood, and contingency plans, overall vulnerability reduction may be limited as activities have been implemented largely in a dispersed manner, without a clear commercialization strategy/market model or water 	
	supply measures. This point is further discussed below.	
3.2.3.2. Has the project followed	What has worked:	Lessons learned:
its guidelines and relevant	• In general the LDCF project seems to have followed its	Communication channels and procedures should be

procedures for implementation?	guidelines and procedures, yes, although management	C	trengthened in a new project, e.g. setting key times
	decisions seem to have been based more on ad-hoc		and rules for communication, bringing local teams to
	decisions than on adaptive management.		neetings in the capital and vice versa Furthermore,
			communication structure in possible Gabú and Bafatá
	What could be improved:		stations should be strengthened, including internet
	A lack of guidelines seems to exist regarding		access. Assigning a field coordinator (not existent in
	communication between project team units in Bissau		ongoing LDCF project) may also be necessary to fully
	and in the field, but also regarding communication with		coordinate field interventions.
	other partners. For example, on several occasions local	• •	Mechanisms should be sought to make other
	project partners such as NGOs contacted Bissau		unctional structures, in order that the Comitê Inter-
	directly to resolve issues, although communication		Ainisterial para o Ambiente, Comitê para as
	should have been directly with the local Gabú	A	Alterações Climáticas, and the Comitê Diretiva do
	personnel. This may have created frictions and	F	Projeto (CDP) can contribute to the efficiency and
	undermined authority of the local team. The new project	e	effectiveness of the project. These organs are even
	would likely benefit from investments into better internal	n	nore important given that other such as composed of
	communication procedures and organization of the	S	senior government officials (Ministers and Secretaries
	team.	C	of State, etc.) do not always contribute fully due to
	• Participation of project steering committee and other	-	political instability, or lack of time or interest. Building
	organs was insufficient (see above).		and supporting these intermediate structures may
	• Distances of participating communities one to another	h	nave great benefits for the project.
	in the Project were high, although the PRODOC clearly		n the Adaptation Fund project currently developed
	stated this should not happen in the project to avoid high		care should be taken to assure that villages are
	costs. This should be avoided in a new project.		elatively close to each other in order to maximize
		ir	mpact and reduce cost for the project.
	nship of project in terms of time and budget		
3.2.4.1. What is the level of	What has worked:	Less	sons learned:
achievement in terms of outputs	Overall cost-effectiveness has been judged positively in		As mentioned the project started with activities that
and outcomes in light of the	mid-term evaluation, despite low overall density of		absorb less funds such as awareness raising or
investments undertaken, and,	subprojects in the field. Spending of resources has, in		raining, both prerequisites for laying the foundations
specifically, are the small-scale	general, occurred according to the project's financial		or subproject execution. These activities could be
interventions cost-efficient?	plan, although political interferences at times affected		carried out simultaneously with the procedures for
	spending. Overall, there is little evidence that outputs		preparation for the construction of infrastructures
	could have been achieved with fewer financial	-	given that those take a longer time to construct. This
	resources. No newer information has been obtained	V	vould allow that project processes are finalized early

3.2.4.2. Is the project complementary to other active interventions in the project region?	 which would contradict the information gathered from the mid-term evaluation. <u>What could be improved:</u> It has been noted that investments into water infrastructure (wells, small dams, etc.) were mostly started in the project's final year. This may have negatively affected the results from disseminating climate-resilient agricultural practices, e.g. crop rotation, conservation of water and soils, terracing or intercropping as agricultural activities in the region rely fundamentally on water supply. As such the contributions of the field interventions to agricultural production, and as such also farmer income, may have been more limited. <u>What has worked:</u> In general, the project is complementary to ongoing initiatives in the target region. <u>What could be improved:</u> Despite complementarity interactions with existing projects seems to have been relatively low, and in other cases possible connections to relevant projects in the target region (esp. those with environmental focus) had not been identified. This shortcoming has been mentioned in the Adaptation Fund reviews of the PCN. 	 and that water supply can support climate-smart agriculture activities in the project. Lessons learned: It is important that connections to complementary projects in the target region are identified clearly, and that communication is established with those projects already in the development phase of the project. (Observation: relevant programs and projects have been identified in pre-proposal, and are listed in Annex B of this document.)
	Iding of adaptive capacities of the beneficiaries	
3.2.5.1. Are the targeted beneficiaries being reached?	 What has worked: Through focus group meetings, collection of testimonies during the mid-term evaluation, and participant observation, it can be affirmed that the targeted population has been reached by the project, in general. What could be improved: 	 Lessons learned: Beneficiary selection should be based on stringent criteria to avoid mis-selection of ineligible candidates for subprojects. This will be relatively easy to implement, and probably will only amount to a more stringent application of existing selection criteria used for the LDCF project.

	 Distances between the tabancas and bad road conditions were not taken sufficiently into consideration from a project operational perspective. This reduced the number of beneficiaries that could be effectively covered by the project due to low population densities in most tabancas. Furthermore, in several cases it was noted after start of subproject activities that beneficiary vulnerability was lower than originally believed – in other words, they should not have been chosen as beneficiary as they were not eligible. In those cases the originally targeted population was not reached as planned. 	tabancas and more resources will permit a larger beneficiary population. This can be identified at project beginning, but should always consider the selection criteria above.
3.2.5.2. To what degree has the	What has worked:	Lessons learned:
project contributed to improving the resilience of local communities?	 Implementation of a number of small and medium scale climate change adaptation practices and infrastructure for water, agriculture and livestock management in 14 tabancas of the project region, including capacity building of farmers in best agricultural practices (crop rotation, seed production), forage production, dissemination of quality seeds, creation of seed banks, but also contingency plans, use of climate information and alphabetization programs, among other. Based on information from the project team especially forage production (brachiaria, or signalgrass) and no-tillage agriculture are working, with positive effects on income generation and food production. Brachiaria is a particular success case, as it has expanded to over 80 tabancas. It is a genus of plants in the grass family native to tropical and subtropical regions of Africa, with excellent growing conditions in savannah landscapes and some semi-arid lands. Brachiaria can be used cultivated as forage, as done in LDCF project, and it is the opinion of the project reports, according to project 	 interventions. This is already addressed. Allocate more resources to field interventions. This is already addressed: the Adaptation Project concept note foresees investments in the amount of US\$ 7 55 million for this project component, including investments in capacity building of fire brigades to prevent project fires (project component 1). Overall the LDCF project is focusing a lot of water interventions that need government support. The LDCF project are relevant in this regard, may do not provide the necessary adaptive capacity building component required for climate adaptation given its lack of market development strategy, and integrated

team.		already installed nearby the village of Benfica during a
• Food stocks and feed stocks were not directly requested		road construction project, but after workers left this
by farmers but nevertheless seem to support resilience		well was not kept up for community - decentralized
building.		water access avoids these kind of problems).
	•	Food stocks and feed stocks are also important for
What could be improved:		family farmers, although communities initially did not
• Vulnerability reduction of family farmers in project region		directly request this activity as it is a new concept for
is addressed through mainly building capacity in water		family farmers in the region. These storage capacities
resources and agriculture management at project-level		are also relevant for seeds and tools.
and through strengthening institutions to integrate	•	Hydrological infrastructure will likely have substantial
climate change into their planning. The following		impacts, including on family farmer income, but this is
observations relevant to increasing the outputs from		yet not possible to see because infrastructure hasn't
these activities can be made:		been implemented. Linking agriculture and livestock
- Quality seed dissemination of dry cereals needs to be		activities with the infrastructure will be very important
better disseminated and used, especially horse corn		to leverage those benefits. Water works need to be
seeds, which are most popular with farmers in the		built at beginning of project – not at end. This way the
region;		clear potential of water infrastructure in the field
- Farmers should have incentives to practice cultivation of		interventions was not capitalized upon. In ongoing
cash crops, including cotton and sesame. This is yet		project – also due mismatch in project planning which
limited in the project region, also due to lack of		included lack of commitment from other national
purchasing power in the region and lack of adequate		agencies - these activities were only recently begun,
market structures;		so that no real impact can be felt in the field until now.
- Improve agro-forestry-pastoral production in the project		On any account, increasing water stress due to climate
region, including through capacity building. This is		change will require strong investments reduce
especially important as cashew-nut dependence		hydrological deficits in the region.
together with declining prices have led to manifestation	•	Contingency plans: could go further. In some cases,
of poverty traps, affecting not only negatively farmer		such as Benfica, existing plan inadequate or
income and food security, but leading also to		ineffective to reduce harm from floods - material was
deforestation in the region;		bought, but rock formation near topsoil leads to
- Building hydraulic infrastructure (mini-dams and		flooding from belowground in the tabanca, and not
rainwater retention basins) aimed at collecting and		from nearby rivers. Tabancas likely will require more
storing rainwater for irrigation and livestock, and focus		help to address these problems than thus have a few
also on household water access through rooftop		tools and an idea where to go to when the flood arrives
rainwater harvesting, a very effective 'social technology'		 risk for houses to collapse continues.

 utilized in dry regions in NE Brazil. Such 'soft' adaptation infrastructure can complement 'hard' investments such as dams, and can support irrigated agriculture (with clear gender benefits, and mostly women work in gardens, next to food security and income increases) through drip irrigation systems, for example; Raise more awareness in communities, especially of women, as regards to the practice of horticulture together water from wells or boreholes constructed to maximize their use, as well as other – cheaper – rainwater harvesting methods. The integration with the water infrastructure, in general, has been low as most investments were only to be carried out in 2016 – with decentralized rainwater harvesting water access would have likely been assured earlier as construction is easier and does not depend on motivation of partner institutions or complex engineering interventions; Encourage communities to increase grain production and consequently crop diversification, and increase of area under cultivation. It was noted that field interventions respond only in part to community needs because local needs for vulnerability reduction are very numerous and because available resources for field interventions in the project are limited (US\$ 632.000). A direct consequence was that in order to benefit all 14 participating tabancas only few interventions could be implemented in each tabanca. 	•	Activities to reduce slash-and-burn agriculture and forest fires should be integrated into the project. The new project should address this via (i) organizing rural fire brigades, (ii) training them to combat forest fires that endanger agricultural production and biodiversity in the project region, (iii) provide them with tools to do so, (iv) sensitize fire brigades on good practices to avoid fire, and (v) train fire brigades to sensitize rural populations before any drought season on fire risks and good practices to avoid them. Forest fires should also be covered by the project's contingency plans for climate risk management. Continue outreach efforts in agricultural techniques, livestock and water management improved distributed in the villages, in order to limit the risk of non- ownership communities of these techniques and to promote greater ownership. The mid-term evaluation (Quesne and Jandi, 2013) and scientific evidence on livelihoods and socio- climatic vulnerability (Eakin et al., 2014; Porter et al., 2014) clearly point out that vulnerability reduction for poor dryland farmers will rely on project-scale interventions (capacity building and technology access) together with broader interventions in political institutions, health, education and infrastructure. While these were beyond the scope of the original LDCF project – and would continue to be beyond the scope of the current project proposal – starting discussions and aligning strategies between different institutional partners is a way forward. As a consequence, the
tabanca.		of the current project proposal - starting discussions

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	 but were not adequately addressed. This leads to the assumption that the social impact may have been larger than the environmental benefit. Regarding resilience it will be important to consider environmental aspects of subuld invest heavily in increasing these partnerships as well as building new partnerships in the areas of heatness and socioeconomic activities. Each year thousands of hectares are being destroyed because of uncontrolled slash-and-burn agriculture, which later are occupied by cashew nut monoculture at the detriment of crops for food security and biodiversity. A literacy program was started in most tabancas, seeing that access to education is a key factor for adaptation, with participation particularly strong from women. One of the aspects that could be improved is the selection of taeachers, which in some cases did have difficulty to grasp the content of the training manuals and transmit their content to their students. This is partly due to the fact that teachers were chosen from local literacy tandards will be essential to make alphabetization a success. Seed distribution and information campaign: while farmers benefited from training, these activities because of the institutions non-inclusion in the program budget for this activity. Due to this many farmers continue to use their usual seeds, or are not prepared to buy quality seeds if they are not subsidized.
	 seeds if they are not subsidized. Lack of interest of some communities in technologies due to perceived lack of climatic risk (p. 13 Mangla). Limited reach of several community radios and constant technical problems, particularly during rainy season,

	affect the project's outreach strategy.	
3.2.5.3. What is the likelihood of	What has worked:	Lessons learned:
achieving the expected impacts?	 Overall likelihood seems high – although this document is unable to assess this given lack of information and analysis. But take into account limited money available for field interventions, lack of market integration/broader approaches, and lack of M&E. 	 Only few funding was available for on the ground measures, so that impacts in terms of adaptive capacity and resilience building necessarily had to be limited. Increased budget for on the ground activities in new project (US\$ 7.8 million) will help to increase project impact at local level.
	What could be improved:	
	• In cases of some subprojects, the project team observed a certain drop in animation after ending of the interventions. Part of the reason is that local government was unable to give further support to those subprojects either materially or financially. In those cases subproject may not be sustainably in the long term.	
3.2.6 Sustainability of activities	and the impacts achieved by the project, and replication	potential
3.2.6.1. What is the level of local	What has worked:	Lessons learned:
ownership?	 In general, project ownership seems high. Communities are involved in all activities, either directly or represented through the RCCF or Environmental Vigilance Committees (CRA). Furthermore local communities were involved in the project design and seeking of solutions from the beginning of the LDCF project. This has been confirmed by the project's midterm evaluation and reports by the project team. It was not possible to confirm project ownership during the field visit for this report given that most interventions were utilized given actual drought conditions in the region – a problem which had been experienced also in 2015. 	It is unclear what has led to low participation and ownership in the cases here presented. One reason could be badly planned or unannounced meetings, lack of knowledge in participatory planning methods or unmotivated personnel which is not willing to use such methods, or cultural barriers which cannot be easily deciphered. Hiring quality personnel, especially young motivated technicians for field and Bissau stations, may support an ownership building process. Working with specialists from different areas, including community development, environmental education, adaptation, anthropology and community facilitators, with strong knowledge in interdisciplinary approaches
	 <u>What can be improved:</u> Active participation of beneficiaries and communities was low on occasions: Although beneficiaries show that 	may benefit not only local mobilization, but also overall project outcomes.

	they are aware of climate change and the need to take measures to reduce its negative effects, ownership and adoption of technological innovations is quite weak, especially among men. Surprisingly this was also noted in meetings to plan water supply and use frameworks in some tabancas, where it would seem that water access is pivotal to climate change adaptation in the region.	
3.2.6.2. Have any efforts been made to review and publish the lessons learned from the implementation of the project?	 What has worked: The project led the development of a comprehensive communications strategy, conducted numerous outreach and communications activities at the base and has set up some institutional communication tools (website, community radio, Facebook page, project newsletter). Currently the internet site for knowledge dissemination is a bit out of date in terms of information and also design. 	 <u>Lessons learned:</u> Elaborate communication strategies may contribute to raising interest to the case of Guinea-Bissau, especially in the international climate finance context. Building a strategy to access these potential funds may be a good way to support future project development in the country. Systematic M&E will be an essential support to achieve this objective.
	 What can be improved: Given the lack of continuous M&E efforts most information provided through the project cannot yet be categorized in terms of lessons learned. This is problematic particularly when aiming to disseminate and scale-up technologies for climate-smart agriculture approaches as there are no information on their effectiveness in reducing vulnerability. 	
3.2.6.3. Do project effects present a potential for replication?	 What has worked: Mid-term evaluation suggested to develop an accurate replication strategy (Recommendation #16). The project had not developed a document on good practices and lessons learned from the LDCF project, in part undertaken in this report. The LDCF project is a pioneer project that strongly invests in capacity building of family farmer to build resilience against adverse climatic change, using both 	 developed on basis of the existing logical framework and theory of change, including the work activities of the LDCF project. New planned work packages taking into consideration the necessity of upscaling.

	immediate and long-term adaptation measures in development policies, plans, programs, projects and actions. Through outputs organized in three work packages/outcome indicators, the project addressed key vulnerabilities in agriculture and water resources management in one of the most affected regions of Guinea-Bissau, and thus contributed to immediate and longer-term development and resilience building of extremely vulnerable farmers, with a particular focus on extremely vulnerable groups: women, elderly and children. However, the LDCF has limited scope in terms of particularly regarding (i) regional outreach (only Gabú Region); (ii) financial resources (few resources available for subproject development); (iii) sustainable natural resources use (lacking activities to curb slash-and-burn agriculture and conserve forests); and (iv) no integrated approaches to vulnerability reduction (lack of integrated approaches). Building on the LDCF project while increasing the scope of its activities may thus clearly contribute to overall vulnerability reduction in East Guinea-Bissau while contributing to a development in the region which is sustainable in term of its environment, water resources, economy and social systems.	 dissemination as through the LDCF project (a) many tabancas in the project region were not covered and (b) in some participating tabancas adoption of new technologies and practices was still low in 2013. Continued focus on Guinea-Bissau's dry East regions the project is expected help reach a critical mass that can avoid non-appropriation of techniques by communities, and thus turn LDCF impact more sustainable. This lesson will be taken in account within the new project. Given the success of the LDCF project and a projected increasing socio-climatic vulnerability in the Gabú and Bafatá regions a replication of existing actions and increasing focus on prevention of slash-and-burn agriculture and forest fires is seen as an important step towards broader climate change adaptation in agriculture and water resources sectors. The current proposal is based on this key finding. Esp. with Bafatá entering: opportunity to get young and motivated technical personnel? This may be MSc students from outside, with G-B citizenship. The motivation of the current staff leaves to be desired. Get personnel to Gabú and Bafatá station, improve communication with Resilience office. Feeling that a bottleneck is number of staff and, in lesser degree, difficulties to work in Gabú.
3.2.6.4. What is the potential for environmental, financial and economic sustainability of the project?	 What has worked: Overall potential for sustainability is large: the activities aim to contribute to the socioeconomic development of a region strongly hit by climatic extremes and change, while protecting the region's environmental resources and contribute to recuperation of degraded lands. But additional investments and scaling-up of activities would 	 Lessons learned: Due to the fragility of the State, continuity of activities after the project would rely largely on own interest by the famers and support from decentralized structures established by the LDCF project, which, however, may have limited resources to contribute to on-the-ground interventions.

be required in order to maintain activities and support	• Establishing means for such continuous involvement
integration into daily routines of farmers.	should be discussed at the start of the new Adaptation
	Fund project. One option would be the creation of a
	Local Initiative Fund that could support CBOs in
	developing subprojects relevant for their communities,
	for example combat against forest fires, reforestation
	or income generation. Information exchange between
	tabancas, such as field visits, workshops, etc., could
	also be supported, based on the experiences with the
	'Seja Dono de Fogo' community forest program. The
	Fund should focus on climate-relevant activities and
	grant support to those communities which are already
	highly affected by climatic variability and change.

ANNEX

A. List of references consulted

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Other documents (not published) were also consulted and integrated into this report.

B. Interaction with other projects and programs in project region

The Adaptation Fund project proposal has synergies and complementarities with other other relevant recent or on-going programs in agriculture and water management in the planned target regions of Gabú and Bafatá, not limited to adaptation to climate change. These synergies and complementarities occur in the following domains: (i) improvement of technical and institutional capacity of stakeholders; (ii) increase of agricultural productivity and food security; (iii) construction of water infrastructure; (iv) management of natural resources; and (v) diversification of crop production.

In the domain of (i) improvement of technical and institutional capacity of stakeholders, the proposal project enter in complementarity with:

- Rural and Agricultural Sector Rehabilitation Project (PRESAR) supported by the African Development Bank. PRESAR's three objectives include the strengthening of rural organizations' capacity to support small-scale farmers and infrastructure in several Regions of Guinea-Bissau, including Bafatá and Gabú;
- The Intensification and Valorization of Local Agricultural Products project (DIVA) from 2008-2011 (US\$ 1.500.000). Carried out with support by the Italian Government in both Bafatá and Oio regions, the project helped in the capacity building of producers and their institutions;
- UNJP/GBS/301/PBF Gender Promotion Initiative (until 2015) with a US\$ 146,796 budget aimed to improve economic security and women's rights including in rural areas, investing in initiatives that ensure their economic and social empowerment through small-scale business activities; promotion and protection of women's rights and strengthening of organizational capacity of coordinating institutions;
- The Local Governance and Income Generating Activities support project was financed by the Dutch government from 2010-2013 with US\$200,000. The project aimed to improve governance by local communities and them in developing income-generating businesses and activities that would contribute for the improvement of their living conditions. Measures included micro-credit for agricultural and livestock production, provision of agricultural training, and technical assistance to prepare community plans.
- UNDP/GEF National Capacity Self-Assessment (2009-2011) made important progress in assessing the national capacity to implement the Rio Convention and developing a Strategy and Action Plan for Capacity Building on Environment Management, points that have directly contributed to the LDCF project development.

In the domain of (ii) increase of agricultural productivity and food security the proposal project has synergies and complementaries with the following projects:

Several initiatives coordinated by the UN's Food and Agriculture Organization (FAO), including the International Fund for Agricultural Development (IFAD). FAO is implementing a number of projects, programs and initiatives that support Guinea-Bissau in the implementation of the Charter for Agricultural Development Policy, its action plan and what is part of the National Program of Food Security. FAO has projects in the whole country and also in the two project regions. It is worth mentioning two particular interventions: (1) The Food Security Project, which targets a number of policy, structural and on-ground interventions to address the now recurring issue food security in Guinea-Bissau; (2) Project for diversification and intensification of agriculture and valorization of agricultural production;

- GCP/RAF/461/SPA Strengthening Capacity of ECOWAS for Effective Comprehensive Africa Agriculture Development Program (CAADP). Implementation in West Africa (until 2015) aimed to improve the food security and nutrition situation in West African States and concrete progress of ECOWAS Member States towards achieving the UNMDG1, measured by increased and sustained agricultural growth in line with the six percent CAADP annual agricultural growth target (US\$4 million);
- TCP/SFW/3402 Support to Policy Initiatives for the Development of Livestock/Meat and Dairy Value Chains in West Africa (end 2014). The project with a US\$ 500.000 budget aimed to subsidize the creation of a suitable environment for the development of value chains for livestock and livestock products to achieve food security, poverty reduction and reduction of dependency on food imports. A successful implementation of the project would contribute also to integration of livestock producers into markets, job creation, improvement of living standards and sustainable increase of livestock production and productivities. The envisaged impacts of the project were in line with the objectives of ECOWAP. The project impact is also in line with the objectives of MDG, FAO's Strategic objective B and the Priority Area 1 of FAO Africa;
- WB/EU Emergency Project for Food Production (2009-2012) with an approximate budget of \$9 million, and other recent/ongoing emergency programs. The mentioned project seeked to assist the recovery of 5,000 hectares of mangrove soils and lowland continental soils for rice growing and vegetable production. The aim was to increase rice production and reinforce food security at community level;
- UNDP's Community-Based-Organizations' Support Project in Gabú Region (OCB) (2008-2012). This project was financed from UNDP core funds for \$1.5 million and its implementation extended from 2008-2012. The project was active in the Gabú region and wanted to support several local community-based-organizations' members to develop agrarian production (crops and livestock) for their self-sufficiency, thus improving their food security;
- Project for agricultural production in urban and peri-urban areas which includes the (i) development of operational plans for the improvement in short-cycle animal husbandry in the wildlands (including Gabú and Bafatá regions), (ii) implementation of micro-projects for breeding, processing and marketing of animal products, and (iii) development of partnerships with private sector and support services (until 2016);
- Several other programs (e.g. by the Ministry of Agriculture) aim to retrieve former production values for cashew nuts and rice, with a particular focus on women's integration in the production chain. Further initiatives focused on community development and rural rehabilitation in Guinea-Bissau.

Regarding to the domain (iii) construction of water infrastructures, the proposal project has strong links to the following programs and projects:

- The Rural and Agricultural Sector Rehabilitation Project (PRESAR) which is implemented by the Ministry for Agriculture and Rural Development of Guinea-Bissau (MADR) with support from the African Development Bank. PRESAR three objectives include the reorganization and rehabilitation of water and agrarian structures.
- The proposal project also enters in synergy with the Program of Work of the General Directorate for Water Resources (DNGHR). Within the framework of the Sub-Regional Programto Fight against Poverty, the Government of Guinea-Bissau has been receiving significant finance for water resource management, as a member of UEMOA (the West African Monetary Union) and from OMVG (the Basin Organization for the Management of

the Gambia River). One of wwo interventions are particularly relevant to mention: (i) UEMOA's Rural Hydraulics Program in Guinea-Bissau, under which a total 300 water points are foreseen to be built, 50 of which are in the Gabú Region, plus a community capacity strengthening program on self-sustained was point management, including sensitization and training in hygiene and basic sewerage; (ii) Integrated water resource management for the hydrographical basins of river Kayanga-Geba, financed through a grant, within the framework of African Water Facility, under which it is foreseen that an Integrated Water Management Plan for the Kayanga-Geba basin will be prepared, as well as the financing of studies for the exploration of basin's irrigation potential with respect to the part of the various river that flows into Guinea-Bissau. The Kayanga-Geba basin is located in the same sites selected for this project application (project running until 2017).

With regards to biodiversity conservation, as fragmentation and pressures on natural resources increase throughout West Africa, areas such as Guinea-Bissau's Forest Belt have become important refuges for threatened species, providing also important national and transnational biological corridors and migration routes for large mammals in the region. In this domain of (iv) management of natural resources principal complementarities are with these projects and programs:

- The UNDP/GEF Project SPWA Support for the Consolidation of a Protected Area System in Guinea-Bissau's Forest Belt project which supported the consolidation of protected areas (PAs) in the Forest Belt through establishment on an interlinked protected area system containing of two inland PAs (Boé National Park, Dulombi National Park) and three biological corridors (Tchetche, Cuntabane-Quebo, and Salifo), located at the junction of Gabú, Bafatá and Tombali 'Regions' in central south Guinea-Bissau. Furthermore, the project supported preliminary assessments on primary threats to biodiversity, including its root causes; undertook a detailed stakeholder analysis for PA implementation; and carried out an initial assessment of climate change risk on Guinea-Bissau's biodiversity. This latter study highlighted potentially disastrous impacts on land, water, and forest resources, with strong relevance for rural livelihoods across the entire Forest Belt region. This projects build on the findings of the GEF/UNDP-3650 project in that it (i) targets key root causes identified (persistent rural poverty, weak institutional capacity and lack of coordination among authorities) through small-scale productive interventions and mainstreaming of adaptation into development planning; and (ii) reduces potential environmental pressures on the Forest Belt via conservation agriculture and agroforestry (including positive impacts via reduced slash-and-burn agriculture). In cases where project beneficiaries are located near or around the Forest Belt, rural extension and capacity building components will be used to incentivize beneficiaries to prevent deforestation and overuse of natural resources. Potential subprojects near the project belt will shortlisted as soon as the project starts in order to allow for timely implementation of these actions.
- UNDP/GEF Sustainable Land Management Project SLM. With a total budget of less than \$0.5 million, the long term aim of the project is to contribute to the recovery of degraded land through institutional and individual capacity building. It is doing so by integrating sustainable land management issues into national development strategies, completing the National Action Plan to Combat Desertification (PAN/LCD), reinforcing, harmonizing and integrating the institutional, technical, organizational and legal capacities in the policy for SLM.
- The Rural and Agricultural Sector Rehabilitation Project (PRESAR) which is support by the African Development Bank. One of tree objective of PRESAR focuses on capacity building in integrated natural resource management and land management at the level

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of villages.
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Finally, regarding (v) diversification of crop production this proposal enters in complementarity with:

- The School Horticultural Activities Support Project which is develoed in collaboration with World Food Program (WFP). This project targets, among other, 50 schools in the Gabú region and aims to diversify and intensify of agriculture as well as valorization of agricultural production.
- The Intensification and Valorization of Local Agricultural Products project (DIVA) from 2008-2011 (US\$ 1.500.000) which also focuses on the intensification and diversification of agricultural production in Guinea-Bissau.

Annex 4: Potential sites identification report







THE REPUBLIC OF GUINEA BISSAU

SCALING UP CLIMATE CHANGE-SMART AGRICULTURE IN EAST GUINEA BISSAU

POTENTIAL SITES IDENTIFICATION REPORT

July 2016



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SUMMARY

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I. INTRODUCTION

Guinea-Bissau is located in West Africa, it is a small country of 36.125 km² and a population of approximately 1.700.000 inhabitants.

The climate divides the country into three agro-ecological zones. The study area (northeast) is characterized by a Sudanese climate with two distinct seasons: a dry season between November and May and a rainy season from June to October. Precipitation in the site identification area varies between 1,100 and 1,400 mm / year. The evapotranspiration rate is 2,507 mm and the average annual temperature is 27,4 ° C. Currently, almost 80% of the annual precipitation falls during the months of July, August and September.

As part of the preparation of the project, a team composed of Mr Apá da Costa, Rural Hydraulic Engineers and Mangla Nantchia, agronomist, started from 3 to 9 November 2016 in the different Sectors of the regions of Bafata and Gabu. The mission was carried out in collaboration with regional and sectoral technical authorities, traditional authorities, farmers and herders. The objective of the mission is to identify sites vulnerable to climate change for possible support in the implementation of the project while proposing technical solutions to mitigate the impacts of climate change on the daily lives of producers and breeders. Support is provided for hydro-agricultural development (shallow water), the construction of drinking troughs (rainwater retention basin or mini-dam) for livestock and water points for the supply of clean drinking water. population.

II. CONTEXT

During the 1950s, the project area was very rich in water. The water resources come from a part of the rains, on the other hand from the contributions of the basins of the rivers Corubal, Geba and Cachéu. Rain is the main freshwater resource for agricultural production. However, a trend reduction in recent years is recorded for rainfall as well as for the rainy season. If in the 1950s the dry and rainy periods were each spread over half the year, the rainfall trend in the last 50 years shows a quantitative and qualitative decrease in rainfall. This implies an increase in the water deficit period for agropastoral activities. Today, the dry period gained a month on the rainy season. In this area, the rainy season extends from June to October.

Despite this modest freshwater potential, its distribution in space and time is very irregular with periods of excess (August, September) and deficit periods (October to June), with the monthly deficit exceeding 100mm (January To May). Thus, the lack of hydraulic infrastructure for stormwater management is a problem that does not always allow food crops to complete their vegetative production cycle, which contributes to a chronic decline in yields, and thus drought and lack of productivity, make livestock production more difficult and less productive.

Human activities related to the irrational exploitation of forest resources and the decentralization of agriculture in watersheds have contributed to deforestation and soil degradation not only in the plains but also at the lowlands. Soil erosion, caused by runoff during the rainy season, resulted in the silting of several plains, particularly in the regions of Gabú and Bafatá.

In this context, it becomes imperative for producers to adapt to climate change by adopting hydraulic systems and infrastructure needed to control and manage water for crop and livestock production that can meet food needs..

III. LOGICAL CHOICE OF SITES AND TARGET GROUPS

The selected sites are part of an effort to support the efforts of farmers (farmers and herders) to adapt to climate change to maintain and increase plant and animal production essential for food and nutrition security, namely rice, meat and milk. The corridor, consisting of the administrative sectors of Pitche, Pirada, Gabú and Sonaco in the region of Gabu and Contubuel and Ganadu in the Bafatá region, is most affected by the effects of climate change, which is more vulnerable in terms of infrastructure, Adaptation and where the water deficit is greatest at the country level, food and nutritional insecurity is more pronounced.

The target group would be all small-scale producers and ranchers, particularly rice-producing women and breeders who are often the first victims, but also the main actors in the fight against food insecurity, grouped in a village and / or group Of villages sharing a common area, whose interests converge, producers and / or pastoralists already engaged, with experience in the fields of activities where the will marked by a concrete initiative.

IV. SITES IDENTIFIED BY THE MISSION

4.1. Methodological approach

A first list of potential villages and sites was established during the working sessions with the regional directorates of agriculture and livestock of Gabu and Bafatá. The targeted area was deliberately restricted to the regions of Gabú, Pitche, Pirada, Gabú and Sonaco and Bafata, sectors of Contuboel and Ganadu, in accordance with the logic described in paragraph 3 above and whose adaptable rice potential and Number of livestock are important. The mission then visited preselected villages for interviews with farmers (farmers and / or herders) and on their respective sites for the recognition and diagnosis of exploitation problems.

During the mission, the team visited several villages and sites in both regions. In each region and village, the team exchanged information on their agropastoral activities and the main constraints with regional authorities, producers, rice farmers and herders. Discussions are followed by joint visits to the sites proposed by the villagers. During the exchanges, the observations and information gathering are made from the explanations of the resource persons and the producers / breeders.

In all the villages / sites visited by the mission, the major constraint identified by farmers and ranchers, which contributed to the decline in yields of agropastoral activities, is the deficit in irrigation water to complete the vegetative cycle. Beyond the water problem, the lowlands are confronted with problems of declining fertility, with the corollary, the strong presence of weeds of grass families and some legumes, especially Striga. Potential beneficiaries also noted the lack of agricultural equipment, equipment and inputs, post-harvest conservation equipment and insufficient technical support.

With regard to livestock activities, the lack of water has led to a decline in the water level in the wetlands, resulting in a reduction in the growth and production of fodder plants and in the increase in the difficulty of watering livestock. Breeders are obliged to draw water in the majority of cases to

a depth that varies between 10 to 30 meters to water, sometimes, more than 100 head of cattle. Also, most breeders are obliged to practice long-distance transhumance.

Vegetable activities are practiced in almost all villages as a source of very important income for women to cover the costs of schooling and medical care for children. But the main constraints for the development of market gardening are the lack of water, the invasion of animals and the lack of access to small agricultural equipment and inputs.

4.2. Sites selected by the formulation mission

A total of 18 sites have been selected for possible interventions of the project in preparation, namely:

- 1. Bucuré Boboti site Gabú region, Pitche area
- 2. Copiro site Gabú region, Pitche area
- 3. Sago / Fulamori site Gabú region, Pitche area
- 4. Soncocunda site Gabú region, Pirada area
- 5. Sissaucunda site Gabú region, Pirada area
- 6. Durabali site Gabú region, Pirada area
- 7. Sambataco site Gabú region, Pirada area
- 8. Cumpaghor Gabú region, Gabú area
- 9. Bada site Gabú region, Gabú area
- 10. Colicunda site Gabú region, Sonaco area
- 11. Madina Sara site Bafatá region, Contuboel area
- 12. Manatu Mansona site Bafatá region, Contuboel area
- 13. Calugada site Bafatá region, Contuboel area
- 14. Sanecunda site Bafatá region, Contuboel area
- 15. Suna Nhamabé site Gabú region, Contuboel area
- 16. Cuncana site Bafatá region, Ganadu area
- 17. Pacua site Gabú region, Ganadu area
- 18. Cantacunda site Gabú region, Ganadu area

V. BRIEF DESCRIPTION AND SYNTHESIS OF DIAGNOSIS OF IDENTIFIED SITES

5.1. Sites in the region of Gabú

5.1.1 Site of Bucuré Boboti

The village of Bucuré Boboti is linked to the Gabu-Bruntuma regional road by a rural road of 7 km. The runway is designed for limited traffic in one direction at a time. This trail is characterized by numerous points highly degraded by runoff and watercourses which render it, during the heavy rains, uncontrollable. The village is small sizes with about fifteen houses, inhabited by farmers and breeders whose population is about 138 inhabitants.

The method of land acquisition in Bucure Boboti is by inheritance. The land is in no case to be rent, but it can be loaned without interest. There are therefore no land conflicts at this site.

The identified shoal is located in the vicinity of the village and consists of a depression with a potentially exploitable surface of about 50 hectares, broad and flat. It is fed with water by the runoff of a small watershed and a rise of the water table.

According to the operators, the flooding of the lowest part is only verified in August and dries almost immediately after the rainy season.

In general, in the plains, the natural forest of the valley drainage basin is deforested because of human activity and therefore susceptible to erosion.

Despite the low yield, rice production is practiced at this level by the rice farmers in the four villages: Bucure-Boboti, Bucure-Dulo, Sintchã Dara and Sintchã Barros. In 2015, the site was flooded.

Soil preparation is manual for most working women. A small number of women are supported by their husbands who plow with the ox plow. Sowing is on the fly. Producers do not use inputs such as chemical fertilizers and pesticides. They use seeds of local varieties.

Although the size of the villages is average, the inhabitants have a large number of livestock. By the data of the regional veterinary service, for all the villages around Bucure Boboti, the number of livestock is estimated at 1100 head of cattle. To ensure water for hundreds of livestock breeders dig and draw traditional well water. At 400 meters from the village, the rural trail linking it to the regional road crosses a stream with a small lake that keeps water until January. The relief of this small watercourse allows, with a development, to create a culinary basin for the watering of the livestock of the zone.

In terms of village water supply, the village does not have a drinking water point for human consumption, nor for livestock, nor for students at school.

The main problems diagnosed for the villages in the area are as follows:

- ✓ Watersheds, practically without vegetation cover
- ✓ Difficulties of drainage of plots located at the center of the shoal during floods and flooding of plots during intense rains
- Lack of knowledge about how to do the adoption of adaptation measures to address water deficit problems for crop irrigation and livestock watering.

✓ 4. Lack of water supply infrastructure for livestock.

5.1.2 Site of Copiró

The village of Copiro is located at 1 km from regional road Gabu-Bruntuma and bound to it by a track. It is a large village with a population of 138 inhabitants.

At the level of this site there is no land without owner and the mode of acquisition of the land in this village is by inheritance and each family know the limits of his land and managing the needs of all members. In case of lack or abundance, it can be borrowed or lent without interest. There is no land conflict at the level of this site.

In terms of village water, the village boasts a water point equipped by a manual pump for the water. This watering can not meet the needs of the population.

Rice field site is not visited by the mission, because the beneficiaries encountered, water for rice production is not a major problem and the water courses that watering livestock dries on the eve of the rainy season. The village has a shallow of 111 hectares, cultivated by 10 villages including the village of Copiro: Binam, Sintchan Mali, Sintchan Malam, Madina Copiro, Cupe, Rauna, Canhamando, Afia and city of pitch. The bottom was partially built by the OMVG in 2007.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn plows.

The main problems faced by operators of lowland are:

- ✓ No control of water and low soil fertility] 3.,
- ✓ The silting and the strong presence of weeds grasses and legumes family especially Striga,
- ✓ The lack of agricultural equipment and inputs, post-harvest equipment and technical support.

5.1.3 Site of Sagoia/Fulamori

The village of Fulamori is located in the left bank of the Corrubal River, just a dozen meters away. It is 12 km south-east of the town of Pitche and connected by a rural track, recently developed by OMVG. It ends at Fulamori in the form of an access ramp to the ferry that ensures the crossing of the river towards the Republic of Guinea.

The village is small with about fifteen houses, with a population of about 138, but it is surrounded by several villages whose main activity is livestock. Its proximity to the perennial water source transforms it into a true pasture center during the most water-deficient months. Data from the regional veterinary service indicate that for all the villages around Fulamori, the number of livestock is estimated at 1100 head of cattle. The herds come from the villages of Sagoia, Rauna, Benfica, Paiama, Canhamando, and Bentem Misside.

The Corrubal River has a permanent watercourse and is the most used water source for watering the livestock of the area, despite its very difficult access for animals. During our visit the difference between the coastline of the natural terrain and the coast of the body of water was approximately 15 meters and a slope of about 1/2. Certainly, during the low (the months of April, May and June) the difference mentioned above will be more important.

Currently, the ferry access ramp is also used by the herds of cattle to drink. Of course, this situation complicated the management of the limelight in particular and transports in general and endangers the lives of each other. During the construction of the runway, the construction of specific ramps for the watering of livestock was considered, but a reason, without knowledge of the populations, the work was not realized.

A possible development of several ramps to the River will facilitate the herding by the breeders of the area.

The main problems diagnosed for villages in the area are the following:

- ✓ The Access to the source of water for the watering of livestock is difficult
- The high probability of accident in the operation of the access ramp to the ferry for carriers and water for herds.
- ✓ Lack of infrastructure of water supply for the livestock.

5.1.4 Site of Soncocunda

The village of Soncocunda is located south of the town of Pirada. It is linked to the regional road Gabu-Pirada by a small rural trail of 5 km. It can be used throughout the year thanks to its low slope and absence of rivers.

In terms of size, the village of Soncocunda is large and populous by 1300 inhabitants. Soncocunda share the same space for rice than for grazing with 5 villages namely: Soncocunda, Sissaucunda Samanco, Sissaucunda Aliu, Golere, Sintchan El Laube. The population of the area is estimated to have 3,000 people and the number of livestock is assessed in addition to 2,000 head.

The site of paddy field operated by whole villages is located 1.5 km from the village Soncocunda. It is very large with a potential conversion of 150 ha. The rice is part of the plain of the river Bidigor. In topographical terms, the site is flat with a small courtyard of ill-defined water which dries quickly after the rainy season. The rice field is supplied with rainwater from a small watershed. That is a few hours after the rains bottom remains without water because they flow to the river Bidigor just some metres to the bottom. This year, the phenomenon arrived in the midst of flowering of rice and threatening the production of the majority of the plots in the bottom. Lack inputs, agricultural materials, the decline in the fertility of the soil, the strong presence of weeds of grass family and some legumes as well as Striga, silting of bottom caused by water erosion are rice production constraints at the level of site.

Soil preparation is manual for the majority of women and the minority is in bovine plow with the support of their husbands. Producers apply direct seeding on fly and use the following local varieties: Herbel (60 days); Mussé Hu1 (C4 - 90 days); Adulai, Fulantcho and Nhada (120 days).

Concerning farming, there is a lack of water. To feed the livestock water farmers dig and get the water from traditional wells with depths ranging between 10-15 meters

The main problems diagnosed for the village-site of the area are the following:

- The slopes, practically without vegetation cover
- \checkmark Difficulties in retaining and managing floods to flood rice plots during the rainy season
- Lack of knowledge about how to do the adoption of adaptation measures to address water deficit problems for crop irrigation and livestock watering.
- ✓ Insufficient water supply infrastructure for livestock

5.1.5 Site of Sissaucunda Aliu

The village of Sissaucunda Aliu is located on the same axis with the village of Soncocunda. The two villages share the same track and paddy field, and Sissaucunda is 2 km south of Soncocunda.

The village of Sissaucunda and the surrounding area (villages of Sissaucunda Aliu, Sissaucunda Samanco, Nhapo, Golere, Soncocunda and Sintchã El Laube) benefited from a mini-earth dam with a reinforced concrete threshold built by OMVG but its lake In February, according to the peasants this is due to the silting of the lake by the runoff during the heavy rains. The fact was noted by the mission. In the current state the mini-dam does not solve the problem of livestock watering in the area. While this is a real headache for breeders. To address this problem, there will need to be a one-time intervention.

5.1.6 Site of Durbali

The village of Durbali is close to the historic village of Cansala (Capital of the Gabu Empire). Easy access, linked to the Gabu-Pirada regional road by a 3 km rural trail. It is accessible all year round.

The entire population of villagers who farm the rice field is approximately 600 people divided into three villages, namely: Durbali, Madina Bocar and Lumbutugo. At the level of this site there is no land without belonging and the method of acquisition of the land in this village is by inheritance and each family knows the limits of its land and manages it at the need of all the members. In case of insufficiency or abundance, it can be lent without interest. There is no land conflict at the site level.

The Durbali rice field has an area of about 60 hectares and in topographic terms, it presents a configuration not homogeneous, flat, narrow width not exceeding 40 metres and quite long. The site is well supplied with fresh water by a watershed and has a Court of temporary water. His cross slope is accentuated, while the longitudinal is low. Despite the complexity of its configuration and its ill-defined bed (the side of the bed is almost equal to the coast from the rest of lowland), the surface runoff and storm water drainage goes fairly well, even after heavy rains. The watershed is partially deforested for the practice of agriculture of plateau and this is compounded by intense pastoral activity.

At site level, the mode of preparation of the soil is manual and animal traction (the plough). Rice is grown in nurseries and transplanted after 30 days in a final field. The varieties used are local and are: cural (drought-resistant 90 days); Sorilumbato, Bissau and Rasta all (more at least 120 days). Farmers use no fertilizer and pesticides.

The constraints of rice production to the level of this site are: the presence of weeds of grass family and some legumes, the lack of materials and agricultural inputs, lack of post-harvest facilities and technical support.

The main problems diagnosed for the village-site of the area are the following:

- ✓ The slopes, practically without vegetation cover.
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season
- Lack of knowledge about how to do the adoption of adaptation measures to address water deficit problems for crop irrigation and technical support.

5.1.7 Site of Samba Taco

The site of Samba Taco regroups several villages around the valley of the river Bidigor. The total population of all the villages is 500 people. At this site, the land acquisition method is inherited and each family knows the boundaries of its land and manages it if necessary of all the members. In case of insufficiency or abundance, it can be lent without interest. There are no land conflicts at the site level. Part of the valley is exploited exclusively for pasture grazing.

The Valley of Samba Taco has an area estimated in 50 ha, of which about 20 ha are grown for rice production. The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn plows. The constraints of rice production to the level of this site are: the presence of weeds of grass family and some legumes, the lack of materials and agricultural inputs, lack of post-harvest facilities and technical support.

In topographical terms, it presents a smooth, flat and with a variable width configuration. The Valley is well supplied with fresh water by a watershed and has a temporary minor bed that runs only in January. The cross slope of the plateau to the bottom of the Valley is accentuated, while the longitudinal is low.

Samba Taco and nearby villages have a significant number of livestock. By the data of the regional veterinary service, for all of the villages, the number of livestock is estimated at 2,000 head of cattle.

The watershed is partially deforested for the practice of farming and this is exacerbated by intense pastoral activity in the area.

The main problems diagnosed for the village-site of the area are the following:

- ✓ Slopes, practically without vegetation cover
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season
- Lack of knowledge about how to do the adoption of adaptation measures to address water deficit problems for crop irrigation
- ✓ Lack of water supply infrastructure for livestock.

5.1.8 Site of Cumpaghor

The village of Cumpaghor is close to Gabú, easy access; it is on the Gabú-Pirada regional road. The total population of all the villages totals 500 people.

The method of land acquisition in Cumpaghor and other villages is by inheritance and at this site there is no land without belonging to an individual. Each family estate is known by the villagers and each family manages its land at the need of all the members. The land is in no way subject to rental, but it can be loaned without interest. There are no land conflicts at the site level.

The Cumpaghor paddy field has a usable area of approximately 100 hectares and in topographic terms it has a homogeneous, flat, narrow configuration, the average width of which does not exceed 50 meters. It is long and serves several villages, such as Cumpaghor, Canhanque, Sintchan Aladje, Sintchan Luntam, Sintchan Bricama, Amedalae. The site is well supplied with freshwater by a relatively large catchment area with a permanent watercourse during the months of August, September, October and November. The configuration of the Cumpaghor site, despite its poorly defined bottom (the bottom's rib is almost equal to the coast of the remaining shoal), the surface runoff and storm water drainage goes fairly well, even after Heavy rain. For wet years this situation

favors production, but on the contrary for the dry years the situation aggravates the deficit in irrigation water. The shoal was partially developed by an NGO in 2007.

Soil preparation is done manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn plows. The most widely used varieties are: Nerica L14 and Nerica L19- 120 days, DEPA-90 days, Sahel 94-115 days. The rice is grown in nurseries and transplanted after 30 days in a definitive field.

Main lowland constraints are: total uncontrolled water, the decline in the fertility of the soil, the strong presence of weeds from the family of grasses and some legumes, silting caused by water erosion, lack of agricultural machinery, lack of agricultural inputs, the lack of post-harvest facilities, the lack of technical support.

The watershed is completely deforested for the practice of agriculture of plateau, which makes it very vulnerable to silting by water erosion.

The main problems diagnosed in the village / sites are as follows:

- ✓ The slopes, practically without vegetal cover
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season
- Lack of knowledge about how to do for adoption of adaptation measures to address water deficit problems for crop irrigation

5.1.9 Site of Bada

The village of Bada is located in the vicinity of the town of Gabu. It is located along the regional road Gabú-Pirada. It is a large village, with a hundred houses, whose population is about 1000 inhabitants. The way land is acquired, as in the majority of villages in Guinea-Bissau, is by inheritance, each household has its own land that it can lend without interest. Land conflicts are rare and if it happens, are usually settled amicably or through wise men of the village.

The paddy field serve not only the population of Bada and the villages of Coiada, Djibata, Sancalancunda, Lenquirim, Mamadu Embalo and part of the population of Gabu and part of the plain of the river Campossa with a suitable potential area of 150 hectares. In topographical terms, the bottom is deep and flat, powered by a fairly large watershed and groundwater that is almost at the surface of the shallow freshwater. The watershed is completely deforested for the practice of agriculture of plain farming and this is aggravated by the high density of the population. The site suffers from degradation due to erosions and also due to the solid waste of households from the city of Gabu. Part of this valley was subject to a development by an NGO in 2008.

The practice of preparation of the soil is manual by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn plows. The most widely used varieties are: Nerica L14 and Nerica L19 - 120, DEPA-90 days, Sahel 94-115 days. Among the constraints of production faced by producers include the decline in the fertility of the soil, the strong presence of bad herbs family of grasses and some legumes, the lack of materials and agricultural inputs, post-harvest facilities and lack of technical support.

The main problems diagnosed in the village / site of the zone are as follows:

- ✓ Slopes, practically without vegetation cover
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season

- ✓ Lack of knowledge about how to do for the adoption of adaptation measures to address water deficit problems for crop irrigation
- ✓ Degradation of agricultural land through silting and deposition of inorganic solid waste from urban residents of Gabú.

5.1.10 Site of Colicunda

The Colicunda site serves several villages around the valley, including: Nemataba, Velingara, Sintchã Bacar and lero Maro. The total population of all villages is 1,500 people. At this site, the land acquisition method is inherited and each family knows the boundaries of its land and manages it if necessary for all the members. In case of insufficiency or abundance, it can be lent without interest. There are no land conflicts at the site level.

The Colicunda Valley has an estimated 70 ha in area. In topographical terms, it has a nonhomogeneous configuration, flat in its central part and with a width, from upstream to downstream, variable of a few tens of meters to more than 50 meters. The Valley is well supplied with fresh water by a watershed and has a temporary minor bed which dried up in December. The cross slope of the Valley is accentuated, while the longitudinal is low.

Despite the chronic problem of lack of water to complete the vegetative cycle and several constraints of production, such as: the decline in the fertility of soils and performance, the strong presence of weeds, the lack of materials and agricultural inputs and the lack of technical support and guidance, the paddy field is 90% cultivated. The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn plows.

A belt of the forest round is well preserved, throughout the two immediate side of the Valley. Despite forest conservation from the slope, the risk of silting remains a problem for the operators of the rice field.

The main problems diagnosed in the village / site is as follows:

- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season
- ✓ Lack of knowledge about how to do for the adoption of adaptation measures to address water deficit problems for crop irrigation.

5.2. Sites of Bafatá

5.2.1. Site of Madina Sara

The village of Madina Sara is located on the national road Bafatá-Cambadju (border Senegal) near Contuboel, easy acces. The total population of all the villages is 500 people.

The mode of acquisition of land at Madina Sara and other villages is by inheritance and at the level of this site there is no land without belonging to an individual. Each family estate is known by the villagers and each family manages his land for the needs of all members. The land is in no way to rent, but it can be lent without interest. There is no land conflict at the level of the site.

The paddy field in Madina Sara has a usable area of about 50 hectares, and in topographic terms, it has a homogeneous, flat, narrow and well sitting configuration, which the average width does not exceed 35 metres. It is long and serves several villages, such as Madina Sara, Cansama, Sitcha Demba Djau, Sintcha, Django, Bricama, Sindja Demba and Sintcha Mamadu. Further upstream, this lowland is shared with the villages of Galugada, Talto, Sare Djeno, Cambadju and Sintcha Djida. At the level of the village, Madina Sara, the site is well supplied with freshwater by a relatively large watershed, with a permanent water courses during the months of August, September, October and November. Despite the fact that in some places the river bed is poorly defined, especially upstream of Madina Sara, the surface run-off and stormwater drainage runs quite well, even after heavy rains. For wet years this situation favors production, but on the contrary for the dry years the situation aggravates the deficit in irrigation water.

True that the slopes are covered by a layer of semi-dense forest, the road that runs through the Valley is the main factor of silting up of the rice fields.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn ploughs. The technique used is the transplanting. Rice is grown in nurseries and transplanted after 30 days in a final field. The varieties used are: uancaran, Banimalo, Demeremedjel all 90 days and Marosirem 120 days. This same bottom is used by women in activities of outstanding gardening during the dry season.

The main constraints of shallow are: the decline in the fertility of the soil, the strong presence of weeds from the family of grasses and some legumes, lack of agricultural inputs, post-harvest facilities and equipment and the lack of technical support.

Madina Sara and nearby villages have a significant number of livestock. By the data of the regional veterinary service, for all of the villages, the number of livestock is estimated at 2,000 head of cattle. But, thanks to the support of the Spanish Cooperation, the village benefits from a large-scale drilling equipped with a high cistern, powered by solar electric pump and two concrete drinking troughs.

The main problems diagnosed in the village / sites are as follows:

- \checkmark Siding of the rice fields
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season
- ✓ Lack of knowledge about how to do the adoption of adaptation measures to address water deficit problems for crop irrigation

5.2.2. Site of Manato Mansona

The village of Manato Mansona is 4 km from the Bafata-Cambadjú national road (Senegal border). It is connected to the national road by a narrow track that branches off at the level of the Madina Sara village. The trail is accessible all year round, but with very critical points during the rainy season. The village is small in size, with about ten houses and a population of about 100 people.

The method of land acquisition in Manato Mansona and other villages, with which the rice fields share, is by inheritance and at the level of this site there is no land without belonging to an individual. Each family estate is known by the villagers and each family manages its land at the need of all the members. The land is in no case for hire, but it can be loaned without interest. There is no land conflict at the site level.

The rice field of Manato Mansona, which is 3 km from the village, has a usable area of approximately 120 hectares and in topographic terms it has a homogeneous, flat and well-seated configuration, the average width of which exceeds 100 meters. It is long and serves several villages, such as Sintchã Samba Djiba, Djabel, Cuncusira, Sintchã Mama, Fataco fula, Sintchã Turé, Braima Soló, Manato II and Sintchã Bilali / Brale.

The shallow water is well supplied with freshwater by a relatively large watershed, with a permanent stream that dries up just after the rainy season. Its configuration favors the natural drainage of runoff water, despite its defined bed. For wet years this situation favors production, but on the contrary for the dry years the situation aggravates the deficit in irrigation water. The way of preparation of the soil is manual. The rice farmers cultivate the land using the
balinculo>technique used to combat weeds and for conservation of water. The technique used is the transplanting. Rice is grown in nurseries and transplanted after 30 days in a final field. The varieties used are the following: Djulukeme (90 days), Banimalo (90 days and Djumorouda (60 days) according to the rice farmers</br/>

This same bottom is used by women in activities of outstanding gardening during the dry season.

Manato Mansona and nearby villages have a significant number of livestock. By the data of the regional veterinary service, for all of the villages, the number of livestock is estimated at 2,000 head of cattle. But this village has only a diameter wells that dried up in February. In terms of village water, Manato is disadvantaged and the problem of access to drinking water is a daily challenge for residents. Of course, in this situation, the watering of livestock with proper water remains a dream.

The main constraints of the shallow are: the decline in the fertility of the soil, the strong presence of especially the Striga weed, the lack of inputs, post-harvest facilities and equipment and the lack of technical support.

The main problems diagnosed in this village/site are the following:

- \checkmark Siding of the rice fields.
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season.
- ✓ Lack of knowledge of how to do the adoption of adaptation measures to address water deficit problems for crop irrigation.
- ✓ Lack of access to drinking water for the population and water for livestock watering.

5.2.3. Site of Galugada

The village of Galugada is located on the national road Bafatá-Cambadju (border Senegal) with easy access. It is large with a hundred houses and village water infrastructure. The population is 1000 people.

The mode of acquisition of land at Galugada and in the villages with which it shares the rice field is by inheritance and all the lands are owned by people. Each family estate is known by the villagers and each family manages his land to the needs of all members. The land is in no way to be rent, but it can be lent without interest. There is no land conflict at the site level. The paddy field of Galugada is the continuity of Madina Sara, the total usable area is approximately 50 hectares and in topographic terms, it presents a configuration not homogeneous, broad, with accented cross slope, but a low longitudinal. At the village level, the site is supplied with freshwater by a small watershed, with a temporary stream during the months of August and September. Despite the no definition of river bed surface runoff and stormwater drainage happens momentarily, even after heavy rains. This situation worsens the deficit irrigation water and do not favors rice production.

The slopes are totally proven vegetation cover and rice field are subject to silting.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn ploughs. The technique used is sowing due to insufficient water. The varieties used are: Bandjulai, Banimalo, Santandjan, CEFA-PRETO, DEPA every 90 days, Djulkeme, Uancaran (90-120 days), Barrafita, Tabuia (60-90 days).

This same bottom is used by women in activities of outstanding gardening during the dry season.

The main constraints to production in the Valley are: the decline in the fertility of the soil, the strong presence of weeds from the family of grasses and some legumes, lack of agricultural inputs, post-harvest facilities and equipment and the lack of technical support.

Galugada and nearby villages have a significant number of livestock. By the data of the regional veterinary service, for all of the villages, the number of livestock is estimated at 2,000 head of cattle. The watering of herds is done by manual creation of water at an average depth of 15 meters. This is the major constraint for the development of farming in the village.

The main problems diagnosed in this village/site are the following:

Siding of the rice fields

Difficulties in retaining and managing floods to flood rice plots during the rainy season

Lack of knowledge of how to do for adoption of adaptation measures to address water deficit problems for crop irrigation

✓ The main problems diagnosed in this village/site are the following

5.2.4. Sites de Sanecunda

The village of Sanecunda is located near the Senegal border 6 km from Fajonquito and 9 km from the Bafatá-Cabadjú national road (Senegal border). It is connected to the Canhamina-Fajonquito trail by a narrow track, which is accessible the all year, but with very critical points during the rainy season and in poor condition. The village is small, a little isolated, with nearly five houses and a population of about 20 people without potable water for human consumption and for livestock which are many in the village. It has a traditional well dug by the villagers themselves that dried up during the dry season, forcing the displacement of breeders in search of long-distance water sources.

To some ten metres from the village there is a shallow where women practice rice cultivation. The mode of acquisition of the land here is also by inheritance. Each family estate is known by the villagers and each family manages his land the needs of all members. The Earth is in no way to rent, but she can be lent without interest. There is no land conflict at the level of the site.

The rice field has a usable area of approximately 30 hectares and in topographic terms, it presents a smooth, flat and comfortable configuration, which the average width does not exceed, 25 metres. It is long and serves several villages, such as Sanecunda, Maro Baque, Samatiana, Sintcha Framba, Brecolon, Sintcha Bacar and Sintcha Bala.

At the village level, the site is supplied with freshwater by a small watershed, with a temporary stream during the months of August and September. Despite the no definition of bed surface runoff and stormwater drainage happens momentarily, even after heavy rains. This situation worsens the deficit irrigation water and does not promote rice production.

The immediate slopes of the Valley are consisting of savannah grass (pasture area), so very susceptible to water erosion. This area contributes to the silting up of the rice fields.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn ploughs. The rice farmers cultivate the land using the
balinculo>, technique used to fight weeds and for conservation of water. The technique used is sowing to pane. The varieties used are: Banimalo, Auael, and Tabadjenque every 90 days. Baghaghar 90-120 days</br/>balinculo>.

The main constraints of the production in this Valley are: the decline in the fertility of the soil, the strong presence of especially the Striga weed, the lack of inputs, post-harvest facilities and equipment and the lack of technical support.

The main problems diagnosed for the village-site are the following:

Siding of the rice fields

Difficulties in retaining and managing floods to flood rice plots during the rainy season

Lack of knowledge of how to do for the adoption of adaptation measures to address water deficit problems for crop irrigation

Lack of access to drinking water for the population and water for livestock watering.

5.2.5. Site of Cuncana

The village of Cuncana, initially, is not part of the villages selected in the working session with the Regional Directorate of Agriculture and Livestock. It is located between the village of Pacua and Ga-Mamaudu (capital city) of the administrative sector of Ganadu. The track which connects it to Ga-Mamudu crosses a shallow, whose width is estimated in 80 meters, flat and comfortable. This lowland is fed with fresh water by a small watershed, without a permanent stream or a defined minor bed. As we move downstream, the river becomes temporary during the month of August and September and the bed is defined.

The shallow upgrading rate is over 95%, but at the time of the mission the water stress of the plants in full bloom, threatening the productivity of the majority of the plots in the shallows, was noticeable at the lack of irrigation water. This valuation rate shows the willingness and commitment of women in food production to ensure food self-sufficiency for their families regardless of the condition.

The Cuncana lands are acquired by inheritance and all the land has an owner. Each family estate is known by the villagers and each family manages his land to the needs of all members. The land

is in no way to rent, but it can be lent without interest. There is no land conflict at the level of the site.

The rice field of Cuncana has an exploitable area over 100 hectares and in topographic terms, it presents a uniform configuration, wide, with a weak transverse slope but a weak longitudinal one. Despite the low longitudinal slope runoff drainage occurs quickly, even after heavy rains. This situation worsens the deficit irrigation water and do not favors rice production.

The slopes are mostly covered by a layer of semi-dense forest but, the track that runs through the Valley is the main factor of silting up of the rice fields.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn ploughs. The technique used is sowing in part because of lack of water.

The main constraints to production in the Valley are: the decline in the fertility of the soil, the strong presence of weeds from the family of grasses and some legumes, lack of agricultural inputs, post-harvest facilities and equipment and the lack of technical support.

Cuncana and nearby villages have a significant number of livestock. By the data of the regional veterinary service, for all of the villages, the number of livestock is estimated at 2,000 head of cattle. The watering of herds is done by manual creation of water at an average depth of 15 meters. This is the major constraint for the development of farming in the village.

The main problems diagnosed for the village-site are the following:

Siding of the rice fields

Difficulties in retaining and managing floods to flood rice plots during the rainy season

Lack of knowledge of how to do for the adoption of adaptation measures to address water deficit problems for crop irrigation

✓ Absence of infrastructure for livestock watering.

5.2.6. Site of Pacua

The village is located a kilometer from Ga Mamudu, City capital of the administrative sector of Ganadu. On the way home, approximately 250 meters, the track which gives access to the village runs through a Valley, whose width reached 150 meters. This Valley is operated by the women of the village to the rice production. Beyond rice production, one of the activities of the Pacua is farming. The track remains accessible throughout the year, but she is in a bad state of conservation.

In terms of size Pacua is a big village with hundreds of houses. Pacua population totals about 1,500 people. At the level of this site, the farm land is acquired by inheritance and each family know the limits of his land and managing the needs of all members. In case of lack or abundance, it can be lent without interest. There is no land conflict at the site level. A part of the Valley is operated exclusively for grazing of herds.

The Pacua Valley has an estimated in 180 ha, potential area which approximately 80 hectares is cultivated for the production of rice and the rest is used for grazing. It can serve several villages in the Pacua round, such as Candafe, Sintcha husband, Sintcha Mamadu I, Sintcha Sulai and Sointchã Mamadu II. In topographical terms, it presents a smooth, flat and with a variable width configuration. The Valley is well supplied with fresh water by a watershed and has a temporary minor bed that dries immediately after the rainy season. The cross slope of the plain to the bottom of the Valley is accentuated, while the longitudinal is low.

The watershed is partially deforested for the practice of agriculture of plateau and this is compounded by intense pastoral activity in the area.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn ploughs. The technique used is sowing a pane and one used for cultivating the land is called "Balinculo", a technique to fight weeds and water conservation. A portion of the crop is kept for the seed. The varieties used are: Guireghade, Djundiguide, Banimalo, Barafita, Lancaran, Maliulem, Comoco and Tchamuel - 90 days; CEFA COIO (white rice) E CEFA PRETO (black rice) - 60 days.

Pacua and nearby villages have a significant number of livestock. By the data of the regional veterinary service, for all of the villages, the number of livestock is estimated at 2,000 head of cattle. This livestock is watered by the manual creation of the water at a depth of more than 10 meters.

The rice production and farming in the area are: the presence of weeds of grass family and some legumes, the decline in the fertility of the soil, the lack of materials and agricultural inputs, lack of equipment Post-harvest and manual flocking and lack of support and technical support.

The main problems diagnosed for the village-site of the area are the following:

- ✓ The slopes, practically without vegetation cover
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season
- Lack of knowledge of how to do for the adoption of adaptation measures to address water deficit problems for crop irrigation
- ✓ Lack of water supply infrastructure for livestock
- 5.2.7. Site of Cantacunda

The village of Cantacunda is located 19 km from Gã-Mamudu (the capital city) of the Ganadu sector. It is connected to Gã-mamudu by a very degraded track with impassable sections during the rainy season. Fortunately, it has an alternative track used while the main track remains impractical. The village is large in size, with more than 50 houses and a population of about 1200 people.

Less than 200 meters from the village there is a shallow where women practice rice cultivation. The mode of acquisition of the land here is also by inheritance. Each family estate is known by the villagers and each family manages his land to the needs of all members. The land is a not for rental, but it can be loaned without interest. There is no land conflict at the site level. The village of Cantacunda share the same shallow with Sintcha Bobo, Sare WINS, Madina, Samba Sintcha, Sintcha Folonco and Sintcha Hoio.

The rice field has a usable area of more than 150 hectares and in topographic terms it has a homogeneous configuration, flat and well seated, which the average width exceeds not 250 meters. It is long and serves several villages, such as mentioned above.

At the village level, the site is supplied with fresh water by a watershed, with a Court of temporary water during the successive rains. Despite the no definition of bed surface runoff and stormwater drainage happens fast enough, even after heavy rains. According to the population encountered, the blade of water level can reach 15 cm, but after a few days this blade is completely drained. This situation worsens the deficit irrigation water and does not promote rice production.

The immediate slopes of the Valley are consisting of savannah grass (pasture area), so very susceptible to water erosion. This area contributes to the silting up of the rice fields.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn ploughs. The rice farmers cultivate the land using the technique "balinculo" used to fight weeds and for conservation of water. The technique used is sowed. The varieties used are: Guireghare, Banimalo, Sambaroconco, DEPA - 90 days; Hotchocoro, Sare Amadi, Sambanconco, Wancaran-120 days; Marlon, Mulai-60 days.

Cantacunda and nearby villages have a significant number of livestock. By the data of the regional veterinary service, for all of the villages, the number of livestock is estimated at 2,000 head of cattle. The watering of herds is done by manually digging water from a single drilling equipped with a manual pump and / or moving long distances to supply livestock with water.

The main constraints of rice and livestock production are: the decline in the fertility of the soil, the strong presence of weeds especially Striga, lack of equipment and inputs of post-harvest equipment, manual of herds watering and/or transhumance and the lack of support and technical guidance.

The main problems diagnosed in the village-site are the following:

- \checkmark Siding of the rice fields
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season.
- Absence of knowledge of how to do the adoption of adaptation measures to tackle problems of water deficit for crop irrigation
- ✓ Absence of adequate infrastructure for livestock watering.

5.2.8. Site of Suna Nhamabé

The village of Sunna Nhamabé is located 3 km from Fajonquito and 6 km from the national Bafatá-Cabadjú (border Senegal) It is connected to Fajonquito by a narrow track and can be driven all year round. The village is medium-sized, with dozens of houses and a population of about 200 people.

Less than 500 meters from the village there is a shallow where women practice rice cultivation. The mode of acquisition of the land here is also by inheritance. Each family estate is known by the villagers and each family manages his land at the needs of all members. The land is not to be rent, but it can be loaned without interest. There is no land conflict at the site level. The village shares

the same shallow with Sintchu, Sintcha Tenquenam, Sare Hamadi, Djarto, Mansidi, Sare dough and Sare Canta.

The rice field has a usable area of more than 150 hectares and in topographic terms, it presents a homogeneous, flat and well-seated configuration, the average width not exceeding 250 metres. It is long and serves several villages, such as mentioned above.

At the village level, the site is supplied with fresh water by a watershed, with a temporary stream during successive rainy. Despite the non definition of bed surface runoff and stormwater drainage happens fast enough, even after heavy rains. According to the population encountered, the blade of water level can reach 15 cm, but in two days this blade is completely drained. This situation worsens the deficit irrigation water and does not promote rice production.

The immediate slopes of the Valley are consisting of savannah grass (pasture area), so very susceptible to water erosion. This area contributes to the silting up of the rice fields.

The preparation of the soil is made manually by the majority of women. Some of them are supported by their husbands by plowing with animal-drawn ploughs. The rice farmers cultivate the land using the
balinculo> technique used to fight weeds and for conservation of water. The varieties used are: Guireghare, DEPA Contuboel, Cinco Male, Mulai Dimba Modadjo - 60 days. Banimalo-90 days</br/>/balinculo>.

Suna Nhamabé and neighboring villages have a large number of livestock. According to data from the regional veterinary service, for all the villages, the number of livestock is estimated at 2000 head of cattle. The watering of the herds is done by manual water extraction from a single drill equipped with a manual pump.

The main constraints of rice and livestock production are: the decline in the fertility of the soil, the strong presence of especially the Striga weed, the lack of inputs, equipment post-harvest, manual watering of herds and equipment and the lack of support and technical guidance.

The main problems diagnosed for the village / sites are as follows:

- \checkmark Siding of the rice fields.
- ✓ Difficulties in retaining and managing floods to flood rice plots during the rainy season.
- ✓ Absence of knowledge of how to do the adoption of adaptation measures to deal with problems of water deficit for crop irrigation.
- ✓ Lack of adequate infrastructure for livestock watering.

VI. SYNTHESIS OF SITES DIAGNOSIS

The following table presents a summary of the identified sites.

Sites (sector)	geographical coordinates			Areas potential	Beneficiary villages	Type of intervention	Observation	cultivated rice varieties	Cycle days
	Village	Rice field	basin		7			nee varieties	
Gabú region									
Bucure Boboti (pitch)	N 12º 20 ' 30 " " W 13 º 43' 30, 8"	N 12º 20 ' 09,5 " '' W 13 ° 42' 58"	N 12º 20 ' 30 " " W 13 ° 43' 30, 8"	100 ha	Sintcha Dara Sintcha Dadi Sintcha Borros Bucure e Boboti Bucure Dulo	Development of a rice perimeter and a hilly basin for livestock		Ann Mussé Hu Landjare Mama samba Djulukeme Mandem Fiji-Fiji	90 90 90 150 150 150
Copiro (pitch)	N 12º 20 ' 33.7 " " W 13 ° 54' 42"			60 ha	Copiro Sambael Sintcha Sintcha Mole Sintcha Malam Binam Madina Copiro Rauna Canhamando E Hafia Pitch Fulbe		The rice field site is not visited by the mission because, according to the beneficiaries encountered, water for rice production is not a major problem, but the stream that feeds the cattle dries up at the end of the rainy season.	Cundara Associação Banimalo OIO Fiki-Fiki	90 90 90 90 90 120
Sago/Fulamori (pitch)	N 12º 18 ' 33.8 " " W 13 ° 55' 59, 7"	nought		80 ha	Sago Rauna Benfica Paiama Canhamando Bentem Misside	Development of several access ramps to the left bank of the Corubal River in the vicinity of Fulamori	An access ramp to the ferry for the crossing of the river is also used for access to water livestock in the area		
Soncocunda (Pirada)	N 12º 37 ' 57.4 " " W 14 ° 10' 59, 5"	N 12º 37 ' 10.7 " " W 14 ° 11' 18, 1"		150 ha	Soncocunda Samanco Sissaucunda Golere Sissaucunda Aliu Sintcha Alaube	Development of a rice perimeter and if the topographic condition is favorable development of a hillside basin	The site relief is very flat and the mission could not identify the appropriate site for the construction of a trough	Herbel Mussé Hu Adulai Nhada Fulantcho	60 90 120 120? 120?
Sissaucunda (Pirada)	N 12º 38 ' 17.5 " " W 14 ° 12' 30, 6"	nought	N 12º 37 ' 27.7 " " W 14 ° 13' 08, 1"	65 ha	Sissaucunda Sissaucunda Aliu Samanco Nhapo	Development of a hilly basin for livestock	The site has benefited from a mini dam built by OMVG, but its lake dried up in February	Herbel Mussé Hu Adulai Nhada Fulantcho	60 90 120 120? 120

Sites (sector)	geographical coordinates			Areas potential	Beneficiary villages	Type of intervention	Observation	cultivated rice varieties	Cycle days
	Village	Rice field	basin						
Durbali (Pirada)	N 12º 32 ' 26.4 " '' W 14 ° 12' 06, 1"	N 12º 20 ' 30 " " W 13 ° 43' 30, 8"	N 12º 32 ' 20.6 " '' W 14 ° 11' 48, 1"	60 ha	Durbali Madina Bocar Lumbutugo	Development of a rice perimeter		Cural Sori Lumbato Bissau Rasta	90 120 120 120
Sambataco (Pirada)	N 12º 28 ' 22.3 " " W 14 ° 10' 34, 1"	N 12º 28 ' 22.3 " " W 14 ° 10' 34, 1"		50 ha	Sambataco Sintcha Zoe Sintcha Farim Sintcha Farina Sintcha Sori Bela Sintcha Mampuron/Sacuampurom	Development of a rice perimeter and a hilly basin for livestock			
Cumpaghor (Gabú)	N 12º 19 ' 04,5 " '' W 14 ° 10' 59, 9"	N 12º 10 ' 30.3 " '' W 14 ° 11' 19, 8"	nought	100 ha	Cumpaghor Sintchan Aladje Sintchan Luntam Sintchan Bricama Amedalae Canhanque Cumba Djiba	Development of a rice perimeter		Sahel 94 NERICA L 19 Sahel 317 Banimalo DEPA	90 115 115 90 90
Bada (Gabú)	N 12º 18 ' 37.1 " '' W 14 ° 11' 19, 6"	N 12º 18 ' 37.1 " " W 14 ° 11' 19, 6"	nought	150 ha	Bada Djibata Sancalancunda Lenquerim Mamadu Embalo Barrios of Gabu • Coida Sinho • NEMA I • Leibalda • Doubalda	Development of a rice perimeter		Sahel 94 NERICA L 19 Sahel 317 Banimalo DEPA	90 115 115 90 90
Colicunda (Sonaco)	N 12º 23 ' 29.4 " '' W 14 ° 21' 18, 2"	N 12º 23 ' 49.6 " " W 14 ° 21' 02, 2"	nought	70 ha	Colicunda Velingara Iero Maro Némataba Sintcha Bacar	Development of a rice perimeter		Bissau Missira Herbel Rasta	120 90 60 115

Sites (sector)	geographical coordinates			Areas potential	Beneficiary villages	Type of intervention	Observation	cultivated rice varieties	Cycle days
	Village	Rice field	basin						
Bafatá regio	n								
Madina Sara (contuboel)	N 12º 26 ' 14.3 " " W 14 ° 36' 42, 2"		nought	50 ha	Madina Sara Cansoma Sintcha Demba Django Sintcha Bricama Fanca Sintcha Demba and Sintcha Mamadu	Development of a rice perimeter	The village has a drilling equipped with solar electric pump, a high reservoir, a fountain and two concrete drinking troughs	Dlulukeme Banimalo Demeremedjel Marosirem	90? 90 90 120
Manatu (Contuboel)	N 12º 28 ' 02,1 " '' W 14 ° 34' 51, 2"	N 12º 28 ' 41.9 " " W 14 ° 34' 01, 3"	N 12º 20 ' 30 " " W 13 ° 43' 30, 8"	120 ha	Diving II Samba Djiba Djabel Cuncussira Sintcha Mama Fataco fula Sintcha Blale Dabel SARE Sintcha Ture Braima Solo Fataco Fula	Development of a rice perimeter and construction of a drilling equipped with a manual pump and a concrete drinking trough	The village is very deficit in water. Visited bottom is flat and intended exclusively for rice production and does not offer conditions for the construction of a pool for the watering of livestock.	Dlulukeme Banimalo Djunooudda	90 90 60
Galugada (Contuboel)	N 12º 28 ' 09.4 " " W 14 ° 37' 25, 5"			50 ha	Galugada SARE Djeno Talto Cambadju and Djida Sintcha	Development of a rice perimeter and space for the watering of the cattle	The village has a drilling equipped with solar electric pump, a high reservoir, several hydrants, but without drinking trough	Banimalo Bandjulai Quarenta dia Djulukeme Wancaran Barrafita Santandim Tabuia Cefa preto DEPA	90 90 40 115 115 60 90 75 90 90
Sanecunda (contuboel)	N 12º 33 ' 54.2 " " W 14 ° 47' 21, 7"	N 12º 33 ' 57.3 " " W 14 ° 43' 30, 8"	nought	60 ha	Sanecunda Maro Baque Samatiana Sintcha Framba Sintcha Bacar Sintcha Bala Brecolon	Development of a rice perimeter and the construction of a drilling equipped with a manual pump and a concrete drinking trough	The village is very deficit in water. Visited bottom is flat and intended exclusively for rice production and does not offer conditions for the construction of a pool for the watering of livestock.	Banimalo Tabadjenque Auael Baghaghar	90 90 90 115

Sites (sector)	geographical coordinates			Areas potential	Beneficiary villages	Type of intervention	Observation	cultivated rice varieties	Cycle days
	Village	Rice field	basin					filee varieties	
Suna Nhamabe (Contuboel)	N 12º 27 ' 42.6 " '' W 14 ° 45' 43, 5"	N 12º 27 ' 23.4 " " W 14 ° 46' 59, 3"	nought	75 ha	Suna Nhamabe Sintchu Sintcha Tenquenam SARE Hamadi Djarto Mansidi SARE dough SARE Canta	Development of a rice area and if the topographic condition is favorable development of a hilly basin	The number of livestock is very important in the area and the water deficit is getting worse each year	Banimalo Guireghare DEPA Cinco Male Mulai Dimba Modadjo	90 60 60 60 60 60 60 60
Cuncana (Ganadu)		N 12º 21 ' 11.4 " " W 14 ° 43' 33"	nought	50 ha	Fodé Sana Sintcha Malam Bairro Samba	Development of a rice perimeter		Banimalo Barrafita Lancaran Maliulem Comoco	90 90 90 90 90 90
Pacua (Ganadu)	N 12º 24 ' 17.5 " '' W 14 ° 42' 29, 4"	N 12º 24 ' 07 " " W 14 ° 42' 44, 3"	N 12º 23 ' 43.5 " " W 14 ° 42' 15, 5"	80 ha	Candafe Sintcha husband Sintcha Mamadu Sulai Sintcha Sintcha Mamadu 2º	Development of a rice perimeter and a hilly basin for livestock		Banimalo Barrafita Lancaran Maliulem Comoco	90 90 90 90 90
Cantacunda (Ganadu)	N 12º 25 ' 23.6 " " W 14 ° 48' 13, 2"	N 12º 25 ' 48.4 " " W 14 ° 47' 44, 4"	N 12º 25 ' 39.6 " " W 14 ° 48' 46, 7"	150 ha	Cantacunda Sintcha Bobo SARE WINS Madina Sintcha Samba Sintcha Folonco Sintcha Hoio	Development of a rice perimeter and a hilly basin for livestock		Banimalo Otchocoro Uancaran Guireghari Sambaroconco DEPA SAHEL	90 120 120 90 90 90

Annex 5: Procedures to resolve a grievance in the framework of the project

Procedures to resolve a grievance

This manual defines the policy and guidelines at the company level on grievance. These guidelines include the following:

- **Filing of Application:** The affected party shall file an application with one resident missions or headquarters of BOAD for receipt of complaints. Upon receipt, the complaints will be transferred to the appropriate Organizational Unit at the Bank's headquarters.
- **Registration and acknowledgment of receipt of the request:** Within five working days of receipt of the request, the resident mission or relevant headquarters service logs the request and sends an acknowledgment to the applicant and a copy to the project sponsor and the Bank's headquarters.
- **Consideration of the admissibility of the application:** Within twenty working days of registration of the application, the Organizational Unit in charge of policy and grievance procedure at the headquarters of the Bank will inform the applicant and the public if the application meets the eligibility criteria.
- Assessment of the feasibility of resolving the dispute: Within twenty-five working days of the determination of the admissibility of the request, the Organizational Unit shall transmit to the applicant, the resident mission and other relevant stakeholders an assessment of the feasibility of grievance resolution activities. The evaluation will also include recommended actions, if any, that BOAD will be willing to undertake or facilitate to encourage the resolution of the dispute considered, or it will conclude on the inutility of the resolution of the dispute and will close the case. This assessment will also determine whether the applicant first must submit a request to one of the grievance process established by the project proponent or the government of the resident mission.
- **Obtaining consent for the resolution of the dispute:** Any dispute resolution efforts based on the consent of key stakeholders, including eg applicants, affected communities, the promoters of the project, the Government of the resident mission and / or the headquarters of the Bank. A dispute resolution process cannot move forward without the voluntary consent of the main parties.
- **Dispute resolution process:** Assuming that major stakeholders have agreed on a course of action to try to resolve their dispute or remedy the concerns of applicants, the grievance process will implement the agreed course of action. Some flexibility will be necessary as the appropriate approach will necessarily be adapted to the individual application and consent. In the absence of consent, the possibilities of dialogue and consultation will necessarily be reduced. If the consultation process works all parties can continue the process until an agreement is reached.
- **Obtaining or not an agreement**: Once complete the dispute resolution process, organizational unit responsible for compliance and regulation to the Bank will submit its report, including the settlement agreement (if applicable) and any recommendations for further action by BOAD to the President of the Institution and to all stakeholders.
- **Stopping the consultation process:** All parties to the consultation may at any time terminate the dispute resolution process if they are not in agreement with the adopted course of action. In certain circumstances, the consultation process will end with no resolution. In such circumstances, a detailed report will be submitted to the President of BOAD, summarizing the application, the measures taken to try to resolve the issues raised by the application, and recommendations for further action by BOAD, if applicable. This final report will also be forwarded to the Head of the resident Mission of BOAD concerned and the applicant, the project sponsor, the government of the country of the resident mission and the public. If for any reason the indicated timetable cannot be respected in a particular case, the applicant and the public will be informed of the delay, the reasons thereof and the new schedule. The person responsible for the grievance mechanism is the head of the Division of Compliance and Regulatory.

Annex 6: List of public consultation during PCN preparation

Tabanca: Copa Monegui Liste de presarca 1577115 1-Sene Embalo 3-Braina Cabala 4 Gala Balde 5 Demba Balde 6 Mulai Erebo 7 Djan Sise 8 Sida Balde 2 - Mussa' Balde 9 Amader Wai So 13 Brina Pa Il Usemane Balde 12 Bubacar So 43 Usumasse So 58 FC 14 sabje 15 Tehante 16 unalos Balde 17 Maurice 18 Saido 16 Isala 20 Salia Balde Balle Embalo 2) Hasane Vusagnane 50 & _ PRRCADAM long and

u Halima Embalo er-Marima Embalo 25-Mamadjan Camara 26-Djabu Balde Copa Yangui 27 Mumine St 28-Mariana Cande 28- Mariana Cande 28- Mariana Cande 30- Gumba Have 30- Gumba Have 31- faramara Balde

15/2/15 Tabanca Faste (1) Lista de presence - Homens 1. Sene Embalo 2. Gancia & Embalo 3. 5600 BALDE 4. AMordú Tisljane Sall iBNO Dembo AMadú Tidjang Baldé BACIR Baldé AMadú guíssé

(ista de presenc, q Camadjama 1/2 Nome Contacto Tabanca/sector 5360170 Prict Caba Camad Saba Camad Saba Camad Saba Isnaba Na Batcha. 5440613 Dunke' Bandjar 543 23 43 Dlaha Ngoque fenda cantore 573-1854 Ramadjaha Adama enbala 543-23 69 Candsala Amada Anore 1 1 6939966 Camadzo ba Tombom Camara 1 5511439 Stali Borndgai FREAK BANDIDI Caniadph 5770613 TUNCAIN Comaro Comodjala 6783864 Ama delle Tolke Carrie 5432977 Crunadifabo, 5492842 Corl Carl Bolds BAGS RO Kamasá 5860791 Camadzola 586- 13-50 Stlo Sanha 5702005 Adama Embalo Canadja 6640959 Long ant y PRRAMATIC

Lite de presença 16/115 Administrado po Leitor de Bitche 1 Louy anost 2 - 5307877 2 - Ismaba Na Batcha' 3 - Gancia pacan Embalo 4 - Mapu Marie 6632306 / 5360394 5-Jaia Cassamá 6954061/5114978 6-9Num Snjen 5804392/6605183.

Fista de presança Benfica Contacto N/O Tabanca Nom-e 5360170 Isnaba Na Batcha Pilette 01 6132247 2 Benfica Mamadu Iero Balde 9276931 3 Benfica Samba DJão Umaro Braldé Alda bade 925-29-38 Benfica Benfica Benfica 6115082 fode Judijai Benfica 5555779 Visuman Baldé BOBOBALDE 503 5385 Lunnep 12 BOPT77 Gancia bacan Embals Gwenz' grijai 5367317 5804391

Seelf Mandinga 15/7/15 Lista presures Halheres 1- Sene Embalo' 28 - Jusso Cassama 29 - Djara Quebe 2 - Saleimane Belde 30 - Fenda Fati 3 Buli Fati 31 - Ude - fati I 4 - Mamadu fati 32 - Djara Sisse 33 - Djara Cassama 5- fodi Cassame 34 - Satam Fati 6 - Valam feti 35- Bolom Indjai 36 - rede fati II +- Almamo Fatr 37 - Mandim Fati 8 - Sadje Quebe" 38 - Mayandim Quebe 9 - Suntucum Fati 39 - Janina Quele 10 - Seco fati 40 - Assi Cassama 11 - Nembali fati 12 - fode Jabo 13 - Queba fati 14 - Jamadu Sila 15- Caba Sila" 16 - Madindim Fati 17 - Marate 18 - Queba Sila 19 - Serifo fati 20. lach anebe 21 - Binta Fati 22 - Satu Sisse 23 - Caramo fati 24 - Nano fati 25 - Demba fat 26 - Marabo Sisse 2) - Sadjo fati

Associação Tessito - Sonaco 15772018 Lista de presurça 1. Queen & Sman > 5804391. 2 - Sene Embolo 5329694 5410894 3- Amadin Euroaló A bili 6448214 4- Jalam fati 6924015 5- Ramato Djalo Tombon tuté 6- Sene 7- Cadi Camara 8 - Ude Take Edanding treke 10 - Ami Mane 11- Mandjilam fati 12- Ijana tuné 13-fatumata Sidil 14- Suucah Sisse 15- Mane sanha Numó Biai N'Jjabi Cassamá 18- Aua Ducuhé 19 - N'GONH N'DAWI 20 - Gancie & Embaló 21 - Sander fai

Annex 7: List of public consultation during potential sites identification

Regras Bafata Talanta Supila Sator Tel

Setor	Tabanca	Nome e Apelido	Função	Contacto	Assinatura
-11-	1-	Song Balde	Aquitellor		
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1	-11-	Sona Balde	_1-		
-11-	-4-	Ramaro Balle	_11-		
-1-	-11-	Curita Stan.	-4-		
	-11-	Secuto Bande	-11-		
	-11-	Manha Bald	e -11-		
-11-		Bady Balde	-11-		
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	Cuncana	Sambaro lande	chefe tabaya		4
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-11-	_11-	Abdulai Cande	_11-	-11-	ALLAI
-11-	-11-	Sana Balde	-4-		A
-11-	A-fl-	Jero Cande	- 11-		
-11-	Vacua	Secola Cassania		96638773	8
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-11-	-11-	Spenato Balde	-17-		
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litche	BUCHRE	Fode Dalo	Chefe tabanca	9559293	Tissiliatura
-lt-	_1-	LBRAINADJALO	AGRICULTOR	10072015	88
11	-11-	MADIU STALD	Pedreiro	gran you	an themas
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_1	-11-	IATA AJALO	11-	9.5526.5009	195.
-11-	-A-	ALARBA SPALD	Conerciante	-	
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-11-	-11-	Abaulai Stalo		1004811.55	APULRAM
-1-	-11-	Milka piato		10,000 DF46	# 0
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GANADU	Canta-	Famoro Sjolo	chefe tabania		
11-	cunda	Sero Balde			·JasoBo
-11-	-11-	Alladogy			0-10-300 BO
-11-	-le-	Braima Aurajob	Agricultor		
-lF	-lt-	Salep Cantala		1. 2. C.	
-lt	1-	Anado Balde	Professor	96631190	Shnadu Balde
-11-	_a-	Spice Saul	Agucellora	10051172	Contraction - Juriou
15	11-	Aissate & assi	-11-	1	
1-	-lt-	Muessoby Camara	_11-		
-11-	-li-	Citava Cande	Agriculton		
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	11-	Fatiemata Camar	Agricultora	100200104	F CULTON
	_1-	Aganater Balde	-11-		
	-1-	Cadjatu Cance	-11-		
	-li-	Malmuna Balde	el-		
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	-k-	Algela Baldle	11-	17	Maka
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bontu	GALLI-	Sidi Danso	Chole tobe	Contacto	Assinatura
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-11-	_N-	Rapi Anh	Agricultor		
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71-	_11-	Malam Dabo	-d-	966933262	· · · · · ·
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-11-	-11-	Malan Danso	-11-	-	
	_11-		gricultora	91 Binana	· L' Male -
-11-	-11-	Sance co-Fati	Macaro	9664722	5-1-02.11641
-IF-	11-	Gade Maria	-/		
-11-	11-	Stara Daulo	-4-		
-11-	11	fereta Stance			
-11-	-11- 1	Bemba Djanco	-11-		
-11-	-1- 5	Par as anco	11- F		× .
-11-	-11 - 1	Han Dally	Agerallio	966540194	enside
-11-	-11-	Mariabe	0-11-		1001
-1- 0	SANE-	Cance do Spreed	-0-	966.334398	ROCH
	2/PILE-/	a mude Mamag	to chefe talau	a 969280880	1, emp
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11-	-11- 4	ma gamanca x	picellora		F Jacon
	_11- A	landema Seide	-11-		00
-11-	-1(- 2	Sadfaty Balde.	11-	9668y 839	
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-11 -	-11-3	leer Nhamado A Laca Nhamado A	gricelton	966453646	*A+ 6
-11-	-11- 1	HAmadel Rehainalys	0 -11-	and the second se	
1		Data 05/11/20	•1	96 90992	90
		Data $/-/2($	016		

REGAD GABY

Setor	Tabanca	Nome e Apelido	Função	Contacto	Assinatura
irade	a Soncocum	& Alta Balde	chefe talance	966005241	ALFA
	-8-	Alla Balde	Apricultura		-
	-11-	Ana Balde		966026016	
	-11-	Mariana Smbal	0 -11-		A STATE
	-11-	fanta Balde	-11-		
	-11-	Frala Balde	-11-	966080799	
	-11-	faturiata Emba	h -11-	966148953	
	-11-	Mariana Jano	-11-	101010	
	-11-	288a Em balo	-/1-		
	-11-	Fidfaul Balde	-11-		
	-/1	Haneader Balde -	Asicultor		
	-11-	Sado Subali -	dt- 1	966087523	Mahamall
N.		F		6866636	in th
	_1-	fero Smbalo	-11-	0000000	
-11-	-11-	Cureball Day	Assicultora		
11	Sessauceum		Chife tapanca	6378195	
-4	da Alin	Dulde Kebe	Asticultor	~ Torav	Dauby
-4-	-1-	Cadhat Balde	Acucultora		saver
-11-	11-	Alta Smbala	-11-	966378195	ALEN
11-	- 01-	Bubacar Balde	Almane.	966650265	SER
_11-	Durbali	Bubacal afan	Chefe de tabano		- Store
-11-	Ma	Branna Sri Bald	e Ageullor	966311980	Rubal
11-		Tuncan Stalo	N-	966385343	
Tra		Mana Salia Gano	_1/_	966099486	5914211 (
11-	di-	Hadiy Gray	-H	966016384	3119293
-11-	11-	Salinah mato	Agraultora	96 6134072	UC (ISA)
-11-	11-	Otcha Cande	_1/-	NO CISTUR	- I-GILOVV
4-	-11-	Aisato Dialo	Mr		
11-	-11-	Aua Dace		969208343	AVazz
-11-	11-	Gemba Embalo	16	966980538	nulli
_11	11-	Amado Stale		10000338	1
11-	11-	Tenem Sano	.11-	66128763	
-11-	11-		Agicultor		
11-	11-	Alfrene Cande		9661 40406	
-11-	-11-	suu suue	Agricellora	955841079	

Data 04 1/2016

Setor	Tabanca	Nome e Apelido	Função	Contacto	Assinatura
BAFATA	BAFREA	pridana pta	S: peruírio	95532940	2 14
11	_11-	Mussa Tali	Streptor	95584540	
Ganadi	Cuncana	Sambarolande	chefe talaya		- A
-11-	-/(-	Anado Balde	Africultor	96643386	6212221
-11-	_11-	Abdullai Cande	_11-	-11-	ALLAI
-11-	-11-	Sana Balde	-4-		A
-11-	A-fl-	Lero Cande	- 11-		
-11-	Pacela	Secola Cassania		96638773	8
-11-	-11-		Kaculter		Le Laki
-11-	-11-	Auado Balde		966351776	Amadu Bala
_11-	_//_	alleba Cassama	AL-		Gulte
-11-	-11-	Abour a Dom	Agricella	-	ABUdu
_11-	-11-	Salend Dabo	-l/a		
11-	_1-	Spilan banara			
_//-	1-	Hould Cassama	Cuiador gado		
-11-	_11_	Selle Daby	Agriculter		
-11-		pramalas	ana d-		
_11-		pellina Jambado	Cuirdly digad	2	
_11-	it pake	ralam ana			
-11-	SC BOTO	Burta Span	Agricultora		
-11-	-11-	Uma Boude	-4-		
-11-	-11-	Ansaro gramanca			
11-	-11-	talunata Balde	-11-		
-11-		Andaw Balde	-11-		
	Ma	Spenato Balde	-17-		
	- March	reesting and the second s			

REGIÃO SE BAFATA Lista de pessoas encontradas durante as missões de terreno

Data 06/11/2016

REGIÃO GABU

Setor	Tabanca	Nome e Apelido	D -	200	
litche	BUCELRE .	Fode Stalo	Função	Contacto	Assinatura
-a-	_1_	TAMINA	Chefe tabanca	9559293	8
_11	 	Inning	ASPICUUTR		
11-		ALLA DIA CO	ledreiro	3660724	19, MADIN
11		DATUDA DIALO	Agricultus	953265009	\$195
_11-	A	ALLO DO DEAL	-11-	-	
_1-	1-	HURKEN SHID	Conerciante		-
11	1-	Abderson and and	Agricultor	96923049B	AbiRis
11	_11_	Aballanan galo		1604811.55	APULRAM
1-	_11	Mulling afacto	_11_	966023746	Alia
-1-	-11-	Maria Maria	-11-		Mussa
-11-	11-	Marianja ofalo	Agricuellora		
	-11-	gana ajeto	0		DECONOLA
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			the second s		
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Data 03 /11 /2016

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Setor	Tabanca	Nome e Apelido	Função	Contacto	Assinatura
SANADU	Canta-	Famoro Jjolo	chefe tabana		
-lí-	aunda	Sero Balde			. Jacob Br
-11-	-11-	Alladopy			Mana D
-11-	-ll-	Braina Aurojob	Agricultor	*	
-17	10-	Sale to Cantala			
-lt	1-	Anado Balde	Professor	96631190	Amader Bald
-11-	_i_	Spice, Sauce	Agucellora		Annon Sura
15	_11-	Aussate & así	-11-		
11-	-lt-	Mirstory Camara	_4_		• •
-11-	1-	Citava Cande	Agriculton		
dl-	11-	Tcherno bande	Agizenta	96656076	Tcharm
	11-	Fatiemata Cama	Agricuetora		
	_1-	Aganate Balde	-11-		
	-11-	Cadjatu Cance	-k-		
	-11-	Malmuna Balde	-U-		
	-0-	Venem Cande	-ll-	966002594	e l
	M-	Mela Balde	-u-	0.1	. Maka
	-10-	Codo ajau	4-		
	the f	Hessenter Seide			
-	71-	rehadle Speer	-11-		
		usal Balde	-11-		
		Marendo Balde.	-11-		14
	-1-1	vhum wanfa	_11-		
		Occere of assi	-11-		
	-11-	hencarb space	-11-		
	_0-	Allena Soutals O a do Balde			
	1-1-1	Q a a Bala			
		o			it and
		Data 07/11/	2016		lorov

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REGIÃO DE BAFATA Lista de pessoas encontradas durante as missões de terreno Setor Tabanca Nome e Apelido Função Contacto Assinatura toontu GALLIof telang anso GA eardto 96678716 Bacon gricelloga HAM Teillos 966933262 -14 11-968554960 96647225 KOUIKATE Freculto G 11--11-2/201 9665W019 -11~ 11. 9663342 SANF. Talara 969280 o chea CILA ralto Aucultora 11-+ 9662174 9664536 TATA 2 HAmadel Nehawayo -11--11-96 9099290 Data 05 <u>11</u>_/2016

45

Selor	Tabanca	Nome e Apelido	Função	Contacto	Assinatura
ttiboel	Madina Sa	va Alade B. Heto Balde	chefe de taban	a	
	-10-	Anado Balde	Agronollar	91620001	Algge Brain
+,	-ll-	Aladie Amado Balde	- Juneno	9110500	Huhamado
	-0-	Henaby Caude	Agricultora	966155800	2 > 2 (> 0)
	-16	19 Mai Sucha In	Macara	160010078	Denilruca
	A	Alticene Bold	AGUPONTOC	QC Co Trace	ussaition
	JI-	Deuglo Balde	Ass, reiltons	9660744	P44IUSE
	A	Satist Deall	Syncarusa	16689934	Jenaby S
	di	Sparjas Sjamana	-4- Ma	76 46 4629	959619721539
	dr	Bale Dyamanca	AI-	aland	pulariato
	115	Idiato Cando	-11-	36965 C9R	Ccole 200
	-11-	Mariana Balde	-11-	BIDDES	
	11-	Umary Mamanca	Agicallac	96907625-	
	-16	Lava Balde	Jucanos	Y6 655 459	
	1	The armen Cooper	-11-	969225516	1274
1.00	Marata	Sacobalde	Add Chale tabana	966666070	Broeve
	1-	Aderlas Balde	Adj. Chefe Jabanca	969108871	SACOR
	-11-	Adrel Balde	Aguillos	ar (so 100	Jacob
	-10-	Mase ana malde	Aquicultora	96632657 966311979	nau
	-AC	Adama Bande	Maccusa	760011397	
	1-	Bore Balde	11-		
	The	Alade Balde	APRIL POLITA Almen	196127395	-
	El	Tcherrio Unaro Bald	Azacaco o Ruman	210/27378	
1	-1-	Malinde Badde	Advicultor		
	Il-	AMADO BALDO	Chefe tabanca		
		menter Sunte	confi lavanca		
	E				
	-				
	08/1/2016				

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Data 05/11/2016

Annex 8: List of public consultation during lessons learned study

Annex 8.1: Public consultation at village level during the lessons learned study

1 - Serifs trato Cales' -2 - Fatic Jalo -3 - Ofale Doudeur 4 - Bridg Doudeur 4 - Bridg Doudeur Aminets Apli Uno perde V/e' Suilie Venezale plac's. Arrinets ofde Moren Bari I Moren Pori I Meriluce Causeri Musla quero Noms & Prinoms TABANCA/VILLAGE, BAJOCLINDA, 15/06/16 previdente neubro Fonchion 2 Moli fati. Mai fati. Ma ucli. Ma ucli. Ma tot. Jo quere Herder Groupemon All welly Ald for 2 Ц 84 497039b 821542994 16 gaz 34 da . Dilene r 16633 8853 Cunta Opulo's Ho Bacan b. Ho Bacan b. Ho Bacan b. Ho Bacan b. He Bacan b. 966539265 contact signature Nortianna cannot f D : A minete Ja/10 F A Haracar bullion txe

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Lo	ocalité Copa M	langue						
Liste de présence								
N°	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE			
01	Adama Cande"	Agricultora	-	t	não sabe			
02	Cemba Djalo	Agricultora	95 591 36 69	F	não sabe			
03	finnae Balde	Agricultora	955599112	f	SumaBl			
04	Sadjo Kebe	Agricultora	966211131	f	não Sabe			
05	Binta Balde	Agricultora		F	Bual			
06	Uni Beraro'	Agricultora	966139044	f	uer			
07	Mumine So	Agricultora	955913583	f	não Sabe			
08	D'enabo So'	Agricultora	969285832	F	não Sabe			
09	Tenem So'	Agricultora	955913617	F	não sabe			
10	Genabo Sjan	Agricultora	9	f	Jeens			
11	Gjabuel So'	Agricultora	-	f	não Sabe			
12	Faru Candé	Agricultora	955913456	f	não Sabe			
13	Mariama Embab	Agricultora	955998430	F	nas sake			
14	Lamanana Balde	Agricultora	955913459	f	Lomolou			
15	Aminara Embals'	Aquicultora	955913402	f	não Sabe			
16	farumara djamanca	Agricultora	966562580	F	não Sabe			
17	Dedja Balde	Agricultora	-	f	não Sabe			
18	Djabo Embals	Agnicultora	955913478	f				
19	Mamadjam Camara	Agricultora		F	não Sale			
20	Aua So'	Agricultora	9	F	não Sabe			
21	Fatumata Balde	Agricultora	966382748	f	não sabe			
22	Binta Embalo	Agricultora	-	F	não Sabe			
23	Buía Embalo	Agricultora	-	f	não Sabe			
24	Sadjo Balde'	Agricultora	955783997	F	não Sabe			
25	Alia Cande	Agricultora	966868820	f	não Sabe			

Liste de présence							
V.o	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE		
26	Mermine Ojaci	Agricultora	99234662	f	munini		
27	Maria 50°	Aquicultora	966104118	e	Mariaso		
28	Adama Sjali	Agricultora	955913607	f	não gabe		
29	Alla Balde	Aquicultora	966354843	F.	não Sabe		
30	Cumbra Djavi	Agricultora	969692801	f	not sabe		
31	Cadidjan Balde	Agricultors	969150461	t	cadisata		
32	Farumara Balde	Agricultors	-	f	Foculda		
33	Bambe Balde	Agricultora	969287408	F	nat sabe		
34	Ansa Djau'	Agricultora		f	nos Sabe		
35	Joseph Djan	Agricultor	969268630	Mi	نانو حسم		
36	Jaia Embals	Agricultor	955260905	M	TATAEN		
37	Adulai Balde	Alfabetizados	966898726	M	Adulai Ba		
38	Alin Balde	Agricultor	966944702	M	ALIU Robel		
39	Fanta Nhabali	Agricultora	-	F	não Sabe		
40	Serito So	Agricultora	955913363	£	no sabe		
44	Aminato Balde	Agricultore	-	f	não Sabe		
42	Sadjo So'	Agricuttora		f	não sabe		
43	Nhima Kebe	Agricultora	-	£	nas sak		
44	Safau Balde	Agricultorp	-	F	mas sake		
45	Ansara Gagigo'	Agricultora .	-	£	não Sabe		
46	Tulai So	Agricultora	766377713	f	nas sabe		
47	Banna Jamba	Agrieultora		t	não sabe		
48	Horcha So'	Agricultora	-	f	não Sabe		
49	Loba. Kebe	Agricultora	-	F	nos sabe		
50	Ajenalo So'	Agricultors	955913348	F	ndo sabe		

Localité Copa Manque, Seclem de Pinata

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57 Farumara 50° Aquicultors — F now Sake 52 Gienalo grato Aquicultors — F now Sake 53 Lajats Balde' Aquicultors — F now Sake 54 Gauce Geundo 50° Aquicultors — F now Sake 55 Salemate grat Aquicultors — F now Sake 56 Aug Kabe Aquicultors — F now Sake 57 Ansaro 50° Aquicultors — F now Sake 58 Nhima Balde Aquicultors — F now Sake 58 Nhima Balde Aquicultors — F now Sake 59 Ajari Balde Aquicultors — F now Sake 50 Binta So° Aquicultors — F now Sake 51 Tenew So° Aquicultors — F now Sake 52 Amiana Balde Aquicultors — F now Sake 53 Again Balde Aquicultors — F now Sake 54 Amiana Balde Aquicultors — F now Sake 55 Jarai Balde Aquicultors — F now Sake 56 Binta So° Aquicultors — F now Sake 57 Aniana Balde Aquicultors — F now Sake 58 Jariana Balde Aquicultors — F now Sake 59 Jariana Balde Aquicultors — F now Sake 53 Jarai Balde Aquicultors — F now Sake 54 Amiana Balde Aquicultors — F now Sake 55 Djarai Djalo Aquicultors — F now Sake 66 Binta Sawane Aquicultors — F now Sake 67 Ansaro Kebe Aquicultors — F now Sake 68 Haniato Kebe Aquicultors — F now Sake 69 Camba Gagizo Aquicultors — F now Sake 69 Camba Gagizo Aquicultor — F now Sake 71 Bubacar So' Aquicultor — F now Sake 72 Janama Salae Aquicultor — F now Sake 73 Jusa Balde Chife de Talance Jose H mais Sake 74 Aniana Salae Chife de Talance Jose H mais Sake 75 Jana Salae Chife de Talance Jose H mais Sake 74 Aniana Salae Chife de Talance Jose H mais Sake 75 Jana Salae Chife de Talance Jose H mais Sake 74 Jana Salae Chife de Talance Jose H mais Sake 75 Jana Salae Chife de Talance Jose H mais Sake 74 Jana Salae Chife de Talance Jose H mais Sake 75 Jana Salae Chife de Talance Jose H mais Sake 74 Baima Embalo Pancultor 966336363 H Mais Sake 75 Janama Sauta Keli Agricultor 966336363 H Mais Sake 74 Jana Sauta Keli Agricultor 966336363 H Mais Sake	Liste de présence								
12 diama 200 Aga and 200 12 diama 200 Aga and 200 12 diama 200 Aga and 200 13 Legisto dialo Again alters 14 Caucho Geundo 50° Agricultors 14 Caucho Geundo 50° Agricultors 15 Jalan Actor Agricultors 15 Ala habe Agricultors 15 Ala habe Agricultors 15 Ansaro 50° Agricultors 15 Ala habe Agricultors 15 Agricultor 15 Agricultor 15 Agricultor 16 Ausaro Kebe Agricultors 16 Ausaro Kebe Agricultors 17 Agricultor 18 Aboen So' Agricultor 18 Adrama So' Agricultor 19 Agricultor 19 Agricultor 19 Agricultor 19 Agricultor 19 Agricultor 19 Agricultor 10 Agricultor	N°	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE			
52 Genalo grabs Agricultors - F now Sake 53 Lagats Balde' Agricultors - F now Sake 54 Taucho Geundo So Agricultors 96665 9295 F now Sake 55 Salemato grab Agricultors - F now Sake 56 Aug Kike' Agricultors - F now Sake 57 Ansono So Agricultors - F now Sake 58 Nhing Balde' Agricultors - F now Sake 59 Bjari Balde' Agricultors - F now Sake 50 Bints So' Agricultors - F now Sake 51 Tenen So' Agricultors - F now Sake 52 Ansono Balde' Agricultors - F now Sake 53 Agriana Balde' Agricultors - F now Sake 54 Agricultors - F now Sake 55 Javai Balde' Agricultors - F now Sake 56 Bints So' Agricultors - F now Sake 57 Agriana Balde' Agricultors - F now Sake 58 Nhimg Balde' Agricultors - F now Sake 59 Agriana Balde' Agricultors - F now Sake 50 Bints So' Agricultors - F now Sake 51 Tenen So' Agricultors - F now Sake 53 Mariana Balde' Agricultors - F now Sake 54 Aminano Balde' Agricultors - F now Sake 55 Agrani Bale' Agricultors - F now Sake 66 Binta Sawane Agricultors - F now Sake 67 Ausaro Kebe' Agricultors - F now Sake 68 Haniato Kebe' Agricultors - F now Sake 69 Camba Gagigo' Agricultors - F now Sake 69 Camba Gagigo' Agricultors - F now Sake 71 Bubacan So' Agricultors - F now Sake 72 Jama Salae - Chefe de Tabanea 95878586 H now Sake 73 Jussa' Balde' Agricultor 966392578 H now Sake 74 Jama Salae - Chefe de Tabanea 959135826 H now Sake 75 Agricultor 966392578 H now Sake 74 Jama Salae - Chefe de Tabanea 959135826 H now Sake 75 Jama Salae - Chefe de Tabanea 959135826 H now Sake 74 Jama Salae - Chefe de Tabanea 959135826 H now Sake 75 Jama Salae - Chefe de Tabanea 95636563 H now Sake 74 Jama Salae - Chefe de Tabanea 957387 H News Sake 75 Jama Salae - Chefe de Tabanea 957388 H now Sake 76 Baaima So' Agricultor 966392578 H now Sake 78 Jama Salae - Chefe de Tabanea 957388 H now Sake 79 Jama Salae - Chefe de Tabanea 957388 H now Sake 79 Jama Salae - Chefe de Tabanea 957388 H now Sake 79 Jama Salae - Agricultor 966712183 H now Sake 79 Jama Salae - Agricultor 966712183 H now Sake	57	Farumara So	Agricultors	-	£	nas Sabe			
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Localité Copa Mangue, Secteur de Pinada.

Annex 8.2: List of the meeting with technical services involves in the LDCF project in Gabù

Reunin avec les services techniques et ONG à Gabie Noms et Prenoms Titre Contact Signature. 1- Mamadi Boi Djolo bovernes Casos KS-366661376 2- Mangla Nantchia Experten Aquinino 966685376 THEADER 3. Mamadu Alingjalo Arotec Civil 95533210 2) alingolo 4. Isneba Na Batcha" - Animator - 955360170 - Nauberly 5 Dawindo Lassana Dobame - Sec. Exect. FRAC - 955139575. 855707456 457 6. Wassand dam Diretor 355707456 MA 7. Gancia Bacan Embaló Expent EN 955367317 frug ADAPTATION 8. Bernardino des Santos cartin dinalle et valorisation des resources. 9. Nicolau de filk-dep. Reg J'éleage 955450654 Ap 95520-67-86 10 . Saico Umaro Embalo - Plataforma de ONG -11 - Jravie Cante Bilon Naghado - P. R. aquallena - 96613337/955417246 feil 12 - Satene Silá Sane Deligado Reg. F. 8/Cala - 96 6864957/5864957 Set 83-

Annex 8.3: List of the meeting with UNDP in Bissau

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Annex 9 : List of public consultation during Full project preparation Annex 9.1. : List of public consultation with Gabù and Bafatà populations during Full project preparation

		Liste de présence			
0	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE
21	Cumba Camava	Lasrador	966314625	F	
72	pine seide	Lavrador		F	
3	Maimuna Dyab	Lavrador		F	
74	Lamarana Danso	Lavrador	966101722	F	lavar
15	Ussumane Halo	criador /correra	966217575	7	1
16	Isia stato	lavrador	966225826	mp	alla
17	Mamadyam Same	Corpriante	966154806	M	Huno O Don
18	fonade pulde palo	Lavrador		7	
79	Mafaro Dayso	Mecanico	96679718+	m	
10	Mamadu Adi Djalo	lavrador.	966841386	7	PR H MAH
1	pabagalle bjacko	Lavrador	6799408	M	Babage
12	Fula Djalo	lauradar	-	M	
'3	Mamadu Usi yala	lavradar	966309867	M	M. udi
4	Bubacar Jalo	lavrador	966490215	M	
5	Tcherno Malo	lavrador	96 6428871	M	
16	Bubacar Hab	Criador / Agriculto	B79 5496	oy	
7	Amade Djalo	Lavrador	966326199	y	
18	Iaia Dyab	lavrador	966327967	M	
19	Braina grab	lavvador	6656968	M	
20	Adulai Deals	lavrador	6641142	7	
21	Braima Djalo	lavrador	6368675	7	
22	Djenasci Djab	laurador	-	F	
23	Assancto Djalo	Laurador		F	
24	Isnoba Na potché	Animador	955360170	M	Tuby tolay
25	Busacar Embalo	Condu for	6854521	M	

Localité Madina Malo Cunda - Gaby

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Nº	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE
26	fatumate Baldo	501	222320211 306320211	£	for Bp'
27	Sepe Embals	Animador	966626052 95532964 966685376 955209928	M	fullet.
28.	Marcele Nantchig SJABARE Komme	Perito Propeto Global lead	955209928	M	Marches
29	SJABARE Komna	Global lead	+228 \$14559;	8 N	. Start
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]	Liste de présence			
Nº	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE
1	Cante Conté	chile di Tabanca	+	MAS	
2	Safiato Corobym	Agricultora	966393197	femi.	Safi GOM
3	Siren Nanzue	Agricultora	-	feri.	NSabe
4		Agricultor		Mas.	NSOPA
5	Tombom Cassgma	Agricultora	966826707	femin	N Sabe
6	Mod Je Biai	-11 -	-		N Sabe
7	Satam seide	-11-	-	fenn.	Satan Sidi
6	ITium sanha	- 11 -	-	fond	with a 11.
2	Stenabi hani	~ 11		flui-	× Spiniko MANT
10	Druce Donfa'	-11-	-	femis	Djucu Danfa'
11	Sali Bjai	-11-		f.Pini	N Sabl
12	Aramata Biai		966869890	ferin	Anamita Di
13	Hariama Sonco	-11-		femi	· Anamata Biai
14	Mavigma Nauque	-11-	-	femi	N Sabe
15	Dilam Fati	- 11 -		feuij	N Sabe
16		- 11-	-		N Sabe
17	Salimato Balde	-11-		feui	N Sabe
18	Drenato Bidi	-11-	~ ·	femi-	is same
19	NEWi Aabo	-11-	-	femi	N Sabe
20	SadTO Biaj	-11_	~	femi	is sabe
21	Carfala Souha	- 11		femi	NSabe
22	Bailo Seide	-11-	~	femi	N Sabe
23	Lassana Conte	Agricultor	966298928	Mas.	Jassan conto
24	Bacar Bicer	-11-		Mas.	
25	Madi Biai	-11-			Magina
	the second s		/	1	Figed Bear

Localité XIME Sector Je Bandadinca

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Localité Xime Sector de Bambadinca

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N°	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE
26	Sadpo conte'	Agricultor	76676444	Mas.	· sadijo
27	Anssumane Singati	Comerciante	966608858		
28	Mamadi Camará	Agricultor	966074540	Mas.	Manadue
29	Abude Bici	-11-		Mas.	r N Sabl
30	Papa Conte'	Pedreiro		Mas.	TSabl
31	Ana Stassi	Agricultora	966109450	Fenin	TU Sorbe
32	Nhobum Fati	- 11 -		fem;	
33	Laslana nane	Féculo Estatis	955589333		* :
34	Mangla Nantchia	Pento Projet	955209128 966685376	M	Vriodeg.
35	DJABARE Komna	Global. Read	+ 2289142337	PM	Start
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Localité Sintcham Mole Sector de Xitole

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Nº	NOM ET PRENOMS	PROFESSION	CONTACT	SEXE	SIGNATURE
1	Mama Samba Bari	Chefed Today Ca	955487847	Has.	s Mama
2	Bacar Slide	Agriautor		Mas-	
3	Nhalim Balde	Hencultora	3557468624	Femi	NSabe
4	Mariama Baldi	- 11	955927446	Flowi >	Morioma
J	Ilbe So	-11-	<u> </u>	Fein	N Sobe
6	Mariama Queita	-11-	955860664	Feni	TV Sabe
7	Sad D Embaló	~ 11-	-	Fenin	NSapl
8	Ejui Bally	- 11-	-	Feri	N Sobe
9	Jena D Bally	-11-	- :	Femi	NSade
10	Frida Gano	-11-		fem	NSabl
M	Umo Bari	- 11-		Ruin	
P	Cadistato Geludale	- 11 -	-	temi	N Sabe
13	Cadiatata Balak	-11-		t-Puin	NSabe
14	Mariana Embalb	-11-		Ferin	
15	Cadid parts Balde	-11-		tenini	N Serbe
16	Haulato Babl	- 11-	~	F-Puis.	
17	Zania Gomes	-11-	-	Femin	Lania Games
18	Samba Sera'	Carpinleiro	553766165	Mas	s Sandos 2 Ja
	Aruna Bari	Agricultor		Mas:	× ADAUNA Bari
	Icido Cande	Affaiate	966715787		Tabo Cande
XI	Jenabo Sora	Agricultora			NSabe,
22		Agricultor			RORCABARU
23	Mariama Baldé	Agricultora			Marion
	and and and	Agricultora		tenin	× uno calibali
20	Lassang Mane' Mangla Nantehia	Tecuico de Estatistic	955589333	Masc.	
20	NEOR Nangenia	Parito Projet Global Lead	15320994		1200 total
27	DSA BARE Komma	Global Lead	12282433	sha m	- Auf

village

MAMPURO

Groupementde

Liste complète des membres du groupement

N°	NOM ET PRENOMS	POSTE	CONTACT	SEXE	SIGNATURE
51	Ana Camara	Domestica	_	F	não Sabe
52	Maîmuna Cande'	Jomestica	-	F	ndo Sabe
53	Satam Sane	Jomestics	-	F	não Sabe
54	Cadidjano Jan	Domestica	-	F	não Sabe
55	Sumae Djan	Domestica	_	F	não Gate
56	Ali Sjamanca	Jomestica	955287945	F	não sabe
57	Djenaba Djalo	forestica	-	F	não Sabe
58	Mansata Dabo	Jomestica	-	F	não Sabe
59	Cadjan Jamanca	Jomestica	955508239	F	não Sabe
60	Aminara Balde	Domestica	-	F	não Sabe
61	Ansaro Baldi	Domestics	955129301	F	não Sabe
62	fliminato Dialo	Domestica	_	F	não Sabe
63	Nhana Cande'	Domestica	-	F	não Sabe
64	Djenabo Seidi	Iomestica	-	F	não Sabe
65	Ansaro Balde	Domestica	955277397	F	nas Sabe
66	Cadi Balde	Domestica	955328074	F	não Sale
67	Sees sjan	Ognistiltur	955767051	M	SecoDja
68	Umaro Jan	agricultor	955930360	M	-Mmora
69	Adulai Djan	agricultor	955293950	M	Aduloi
Fo	Braima gan	agricultor	-	M	Burla
71	Sene Embalo	Animador	96 6626052 955329694	M	funhals
72	Mangla Nantchia	Perito Projek	966685376 955209928	M	Mantaline
-73	Mariana Djamanca	Agricultora	5182564	F	Now cape los
74	Son Drive rainine	Global Lead	4228 9143597	M	Safet
75	Tcherus Ofalo	Agricultor	953335607	-M	Elect
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Annex 9.2: List of the meeting with technical services involves in project in Gabù

Reunin avec les services techniques et ONG à Gabie Noms et Prenoms Titre Contact Signature 1- Mamadi Boi Djolo Coverner Casor 366661376 JAF . 2- Mangla Nantchia Experten Aquinino 966685376 THAT 3. Mamadu Aliggalo Arotec Civil 95533210 2) aligolo 4. Isneba Na Batcha" - Animator - 955360170-Nauberlí 5 Daurindo Lassana Dohame - Sec. Exect. FRAC - 955139575-Dy 6. Wassana dam diretor 3557024556 477 7. Gancia fracan Embalo' Expent EN 955367317 front ADAPTATION 8. Bernardine des Santos contros G.D. V.R. - 966603319 9. Nicolau de filk-dep. Reg J'éleage 955450654 AP 95520-67-86 10 . Saico Umaro Embalo - Plataforma de ONG -M_ Jranie Cunte silon Noghedo - P. R. Aquallena - 36613333/955417246 feels 12 - Satene Silá Sane Delegado Reg. F. f/Cala, - 966564957/5864957 Set 13-12 - Satene Silá Sane Delegado Reg. F. f/Cala, - 966564957/5864957 Set 13-

Annex 9.3. List of the meeting with technical services involves in project in Bafatà

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Annex 9.4. Meeting with fire control comity of Mampuro

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Américana Balae' VICE-Presciente 955139699 Hama Seula Ecier Nesciente GiTT - Amínaro Ender Ecier Desciente GiTT - Djendro Ecieli Creendena GiTT - Maina Eududo' Ainanceira GIT - Raime Comara Dresciente GFC 955258008 Ali Djavi Oper Operidente GFC 955258008 Budra Egui Operdenador GFC 95546387 Budra Egui Operdenador GFC 955461227		Présidente de comité de Para-Pago	956100578		mão Sabe
Harma Saudra EcierPassieute Gitt-Harmare Eudra EcierPresidente Gitt-Annare EudraloVice-Presidente Gitt-Animare EudraloCoordenadora Gitt-Animuna EudraloFinanceira Gitt-Animuna EudraloFinanceira Gitt-Animuna EudraloPresidente GFC95228008Ahri SpauVice-Presidente GFC95248387Budracar DjauíPresidente GFC958461227Budracar DjauíPesendenador GFC958461227	Animara Balde	VICE-Presidente	955139699		Hqm1 mkg
Hama Saulta Liedi Aminavo Embalio Lie Presidente Gitt - Aminavo Embalo Vice-Presidente Gitt - Djenato Leidi Cerendera Gitt - Maimuna Eudelo Financeira Gitt - Paimuna Eudelo Presidente GFC 955258008 Alti Djavi Presidente GFC 955258008 Bultacar Djavi Peridente GFC 95546387 Bultacar Djavi Peridente GFC 95546387	3				
Aminaro Embals' Vice-Prosidente Gitt		Presidente GiTT	1		não Sabe
Gjendra Leidi Coordenadora Gitt - Maime Lududo' Financeira Gitt - Raime Comara Presidente GFC 955258008 Abri Diai Bubacar Djavi Coordenador GFC 955461227 Bubacar Djavi Coordenador GFC 955461227	Aminare Embals	Vice-Presidente Gitt)		nés Sabe
Maimuna Fududo' Financeira 677 - Braima Camara Presidente GFC 955258008 Abri Djauí Vice-Presidente GFC 95548387 Bubacar Djauí Ceendenador 6FC 955461227	gjenebo feier	Coordenadora GiTT	1		néo Sabe
Presidente GFC 955258008 Vice-Presidente GFC 955348387 Ceendenador GFC 955461227	Maimina Zududo	financeira 6:17	ł.,		mer sake
Braima Camara Presidente GFC 955258008 Abri Djaví Bubacar Djaví Cendenador GFC 955461227 Bubacar Djaví					
Hri giau' Vice-Presidente GFC 95548387 Bubacar Davi Coordenador GFC 955461227	01 Praima Comara	Presidente GFC	0155258008		13 Ting
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	03 Bubacar Davi	Condenador 6 FC	955461227		noi Sade
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Annex 9.5. Meeting with the comunautary forest control comity of Madina Djalocunda

Madina Sjaloeunda

Comité de gestion et de fouveillance de forêts Groupement .. Communautache à Radina Dialocenda

Liste complète des membres du groupement

Nº NOM ET PRENOMS POSTE CONTACT SEXE SIGNATURE 6379762 Ħ DI Soma Dialo Presidente F 02 Same V. presidente tenem 6013520 M 03 Side Secre Camara 676 19 77 Amadu Camara Tixoneiro 04 M Guarda - florafte 05 M Reinde 06 huarda Floriele ~ Acuso 6571736 07 Djalo Guardy-STEP 51548 tlorest 08 Mamadram Same harda Tain 09 Malo hugeda store 10 Corca Dytay Dyrum celebal 11 6217575 12 your DY alo *

Annex 10: List of participants of Environmental and Social Management Framework (ESMF) validation workshop

Data, U OS / 12/16 N.º 08 / 12/16 Nome Completo Telemóvel 245 667 09 70 ou 245 580 48 27 Secretaria de Estado do Ambiente ADAPTATION FUND 4 3 2 5 S 00 7. Marria Salin valas Mamudo Embaló Midula pto Bubacan Bole anna laur the 4/cm Vanla pontor male Ballele Project Scaling up climate change-smart agriculture in East Guinea Bissau Jone Hicetalo Avenida dos Combatentes da Liberada da Pátria-Palácio de Governo Telemóvel 245 678 40 46 ou 245 578 40 46 Lista de Presença Direcção Geral do Ambiente 5, pecelério Bafata 955379802 República da Guiné-Bissau SECRETARIA DE ESTADO DO AMBIENTE Thoteccas Cinic RAJI Batata pina 22 gueretario 42396/6231300 Cabi/Becnetario do enganios 966950094 Local: Instalações da Empresa ENAFUR Pitche/Secut. Adminustrata 35/5360534 moredon Proveniência Secretário - tin 966156418 lep. de Govern. 766095282 966700428 955333210 Contacto R BOAD Berberrar Assinatura opst.

Avenida dos Combatentes da Liberada da Pátria-Palácio de Governo Telemóvel 245 678 40 46 ou 245 578 40 46

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Avenida dos Combatentes da Liberada da Pátria-Palácio de Governo Telemóvel 245 678 40 46 ou 245 578 40 46

38. 37. 36. 35. 34. 33. 32. 31. 30. 29. 28. 27. 26. 25. 24. labs Balde Cumba Mainnuma Embaló Muliquescly Bedell secolor. h'calau BU lar coli AMADU hadru Shaw Halands Mario board 979 bance ()amoun Co carbo me 120/00 00 Ha Baldo' 6 0 Ball þ Bucure robote . Comba na co JRA-B Jacking-Sen- Contro Mading-Screconius Calo Gada G Trebri WARNS -Mamato acre 2 asu r R D 1 N D I V CON ncana 72 92545426 896 5295 368 966192764 6123537 20 6084450 9558068 30 355563222 94-6-220926 N541 + 49 96 55385858 Junka acil Balde

Avenida dos Combatentes da Liberada da Pátria-Palácio de Governo Telemóvel 245 678 40 46 ou 245 578 40 46

53. 52. 51. 50. 49. 48. 47. 46. 45. 44. 43. 42. 41. 40. 39. BRAIMA EMBALO GORI MAU Chilsino Councie 2 Amolo lei NAGA annonra amora - pinla mynola ona ach AUVA hora 5 analu 0 Indder Ter ina ORINA Balde Bal de Belel Balell 0 0120 Jou SAMOU-Conda Aliu-SAMBA TACO Sen Co-curdo-Conforghon -5 SUMP oli-0 UM1 0201 noca Un Undu bale Cunda P ANacly ø 4 In Such ngun A Senolo) Jugar, Incela 542 Vinco 966955403 10846 26 36-9274737 955453792 T

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68. 67. 66. 65. 64. 63. 62. 61. 60. 59. 58. 57. 56. 55. 54. Ra hais co Ansumary 2000 Viriale Wide Comes leixer en turbar -0 ariù aly writed 762 2220 690 A Strau 52 DNA コカ (allent Oscans Teles à ICHEDN'A 2 lomia B4 and wita · de Mari. Lavo 6 8 SRC. TES AAAC -Phissou いちとわ XJ INM . BA merche the state inade 71 6 B the second Bissau, 5 TOR eronale e Adapia NYQU, WWW A D. Cord KONNO PRESIDENT Chro Aller PBBC. SE 955329694 97 35 254 2888 951485015 825602556 0 76660 33 19 Str 5238 955852463 6681-83.18 95.5139572 22 935422007 655367317 hoh2493 1 87.98-99 24 66 74 5 G nes \$9

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Annex 11: List of participants of Full project validation workshop



República da Guiné-Bissau SECRETARIA DE ESTADO DO AMBIENTE

ADAPTATION FUND

BOAD

Direcção Geral do Ambiente

Project Scaling up climate change-smart agriculture in East Guinea Bissau

Lista de Presença

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Secretaria de Estado do Ambiente Telemóvel 245 667 09 70 ou 245 580 48 27

Avenida dos Combatentes da Liberada da Pátria-Palácio de Governo Telemóvel 245 678 40 46 ou 245 578 40 46

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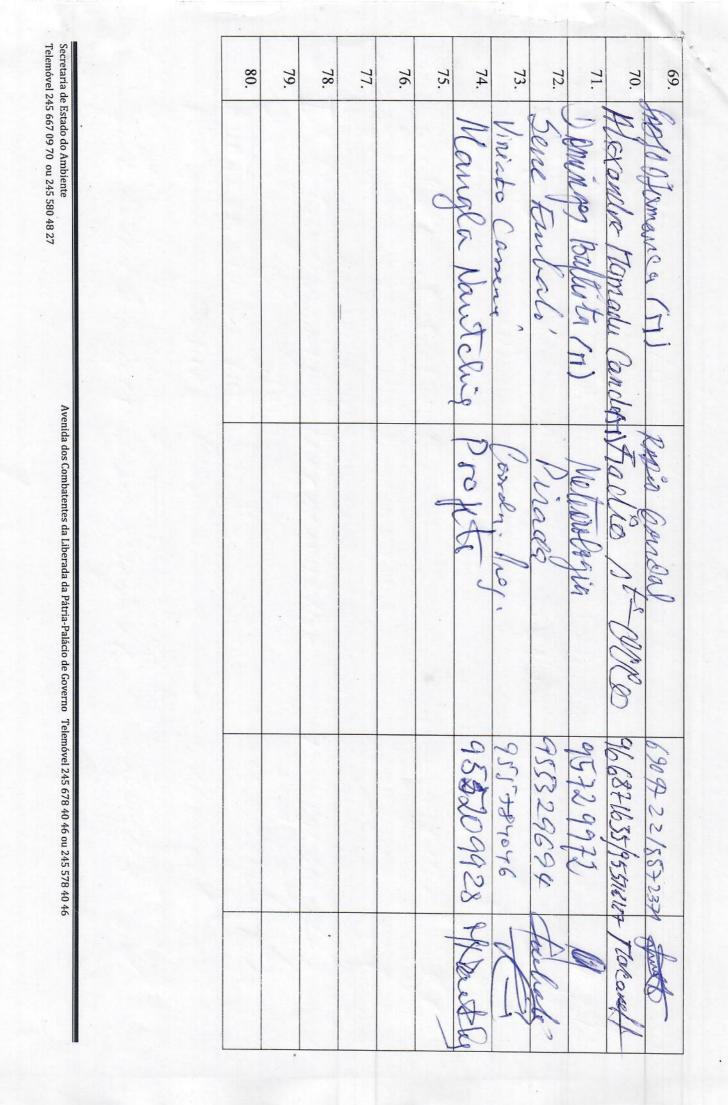
22. 23. 20. 19. 18. 17. 14. 16. 15. 12. 10. 9 13. Ladi Bar(de /F) tadie Dradia (17) Ramata Baldi (F) Maniero Juliumarie Pane (17) gabu (ATESS- (4) Subs Balcer (11) (II) make nog TO: BOR: (F) Aminde Belle (#) ALFA EMBALO (M Djariche Silan (F) Mamadu 24alo (17) Muhamadu Balder (n) Hading-Sara dula Biso HSSE (H) Courte ESt - Lech GABIS (I) mole avec Din Mhamedje (H) Sourcunde. Soch anderber SiSSAUCUINAR ALIU Sura - talentila Contract (H) Colicinda - Sono co Bucus Bable-Ritchi (N) Cente currole - Ga soonus Buchto Bohote-Pitchi (11) Some unde - Jefonki to Suna-tajonkilo Deuxo-badi Madina-Jara 1× 896555398 95 576 5353 56 78 2 2 9 96 6611362 (Sues 369166705 955453792 87-58 789 Cakel Balle

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Avenida dos Combatentes da Liberada da Pátria-Palácio de Governo Telemóvel 245 678 40 46 ou 245 578 40 46

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Annex 12: Law of Guinea Bissau on Land

Annex 12: Lei nº 5/98 de 23 de Abril

ARTIGO 2º Da Propriedade da Terra 1. Na República da Guiné-Bissau a terra é propriedade do Estado e património comum de todo o povo.

 A terra como suporte físico fundamental da comunidade é valor eminentemente nacional qualquer que seja a forma da sua utilização e exploração.

3. Os direitos constituídos sobre a terra e so bre os recursos naturais importam em igual pro tecção quer resultem do costume, quer da lei

 4. As benfeitorias realizadas sobre a terra podem ser de propriedade pública ou privada.

Annex 13: Project operating account tables

Operating Account of 1 ha of Rice in Lowland areas (with project)

| Item | Quantity | Unit | Cost per
Unit | Values |
|---|----------|--------------------|------------------|---------|
| I. Operating Income | | | | |
| 1.1 Operating Acreage | 1 | ha | | 0 |
| 1.2 Raw product | 4000 | kg | | |
| 1.3 Harvest loss and decoupling loss (20%) | 800 | Kg | | 0 |
| Total net product (Husked rice) | 3200 | Kg | 350 | 1120000 |
| II. Expenses | | | | |
| 2.1 Operating Expenses | | | | |
| Ploughing and Other Soil Preparation | 1 | ha | | 40000 |
| Seed | 125 | kg | 224 | 28000 |
| Fertilizer | | | | |
| • NPK | 2 | Bags
de
50kg | 16500 | 33000 |
| Urea | | | | - |
| Pesticides | 1 | U | 15000 | 15000 |
| Workforce
(90 HJ x 1500 FCFA / HJ i.e. 135 000 FCFA
paid in husked rice - Contribution of
beneficiaries for breeding, weeding, hoeing,
Cortication, threshing, transport, etc.) | 386 | kg | 350 | 135100 |
| Small maintenance materials | | FF | | 20000 |
| Contribution to the maintenance of hydraulic appliances 5% net product (Husked rice) | 160 | kg | 350 | 56000 |
| Total Expenses | | | | 327100 |
| Net result per hectare with the project | 2265.43 | Kg | 350 | 792900 |
| Result per hectare without the Adaptation Fund project | | | | 9750 |
| Value added to the project through the application of adaptation measures | | | | 783150 |

ltem Cost per Quantity Unit Values item I. Operating income 1.1 Operating Acreage 0 1 ha 1.2 Raw product 600 kg 1.3 Harvest loss and decoupling loss 120 Kg 0 (20%) **Total net product (Husked rice)** 350 168000 480 Kg **II. Expenses** 2.1 Operating Expenses Ploughing and Other Soil Preparation 1 20000 ha 75 224 16800 Seed kg Fertilizer sacs de • NPK 1 50kg 16500 16500 • Urea 2 1 U Pesticides 15000 15000 Workforce 257 kg 350 89950 Small maintenance materials FF 0 **Total Expenses** 158250 Result per hectare without the

project

27.86 Kg

350

9750

POTATO

Operating Account of 1 ha of Potato with project

| Items | Quantity | Unit | Cost
per
Unit | Values |
|---|----------|-----------------|---------------------|---------|
| I. Operating Income | | | | |
| 1.1 Operating Acreage | 1 | ha | | |
| 1.2 Raw product | 25,000 | kg | | |
| 1.3 Harvest loss and decoupling loss (10%) | 2500 | Kg | | |
| 1.4. Self-Consumption (20%) | 5000 | | | |
| Total net marketable product | 18,000 | Kg | 400 | 7200000 |
| II. Expenses | | | | |
| 2.1 Operating Expenses | | | | |
| Ploughing and Other Soil Preparation | 1 | ha | 50000 | 50000 |
| Seed | 1 | lot | 900000 | 900000 |
| Fertilizer | | | | |
| • NPK | 2 | sacs de
50kg | 16500 | 33000 |
| • Urea | | | | - |
| Pesticides | 1 | U | 15000 | 15000 |
| Workforce | 630 | H-J | 1500 | 945000 |
| Small maintenance materials | | FF | | 40000 |
| Contribution to the maintenance of hydraulic appliances 10% net product | 1800 | kg | 200 | 360000 |
| Total Expenses | | | | 2343000 |
| | | | | |
| Net result per hectare with the project | 12142.50 | kg | 400 | 4857000 |
| Result per hectare without the
Adaptation Fund project | | | | 2901700 |
| Value added to project through
application of adaptation measures | | | | 1955300 |

Quantity Items Cost per Unit unit Values I. Operating Income 1.1 Operating Acreage 1 ha 0 10000 kg 1.2 Raw product 1.3 Harvest loss and decoupling loss (10%) 1000 0 Kg Total net marketable product 9000 Kg 400 3600000 II. Expenses 2.1 Operating Expenses Ploughing and Other Soil Preparation 1 ha 20000 Seed 75 224 16800 kg Fertilizer sacs de • NPK 50kg 1 16500 16500 • Urea Pesticides U 15000 15000 1 630 H-J 1000 630000 Workforce FF Small maintenance materials 0 **Total Expenses** 698300 **Operating income per hectare without** project 7254.25 Kg 400 2901700

TOMATO

Operating Account with project – Tomato (1 ha)

| Items | Quantity | Unit | Cost per
Unit | Values |
|--------------------------------------|----------|---------|------------------|---------|
| I. Operating Income | Quantity | Unit | Unit | Values |
| | | | | |
| 1.1 Operating Acreage | 1 | ha | | |
| 1.2 Raw product | 24,000 | kg | | |
| 1.3 Harvest loss and decoupling loss | | | | |
| (10%) | 2400 | Kg | | |
| 1.4. Self-Consumption (5%) | 1200 | | | |
| Total net marketable product | | | | |
| U. Evenence | 20,520 | Kg | 300 | 6156000 |
| II. Expenses | | | | |
| 2.1 Operating Expenses | | | | |
| Ploughing and Other Soil Preparation | 1 | ha | 50000 | 50000 |
| Seed | 1 | lot | 900000 | 900000 |
| Fertilizer | | | | |
| | | sacs de | | |
| NPK | 1 | 50kg | 16500 | 16500 |
| | | sacs de | | |
| Urea | 1 | 50kg | 16500 | 16500 |
| Pesticides | 1 | U | 15000 | 15000 |
| Workforce | 630 | H-J | 1500 | 945000 |
| Small maintenance materials | | FF | | 40000 |
| Contribution to the maintenance of | 0050 | | | |
| hydraulic appliances 10% net product | 2052 | kg | 200 | 410400 |
| Total Expenses | | | | 2393400 |
| Net result per hectare with the | | | | |
| project | 12542.00 | kg | 300 | 3762600 |
| Result per hectare without the | | | | |
| Adaptation Fund project | | | | 1461700 |
| Value added to project through | | | | |
| application of adaptation measures | | | | 2300900 |
| | | | | 2300300 |

ting Account without project

| Items | Quantity | Unit | Cost
per
Unit | Values |
|--|----------|--------------------|---------------------|---------|
| I. Operating Income | | | | |
| 1.1 Operating Acreage | 1 | ha | | 0 |
| 1.2 Raw product | 8000 | kg | | |
| 1.3 Harvest loss and decoupling loss (10%) | 800 | Kg | | 0 |
| Total net marketable product | 7200 | Kg | 300 | 2160000 |
| II. Expenses | | | | |
| 2.1 Operating Expenses | | | | |
| Ploughing and Other Soil Preparation | 1 | ha | | 20000 |
| Seed | 75 | kg | 224 | 16800 |
| Fertilizer | | | | |
| • NPK | 1 | sacs
de
50kg | 16500 | 16500 |
| Urea | | | | - |
| Pesticides | 1 | U | 15000 | 15000 |
| Workforce | 630 | H-J | 1000 | 630000 |
| Small maintenance materials | | FF | | 0 |
| Total Expenses | | | | 698300 |
| Operating income per hectare without project | 4872.33 | kg | 300 | 1461700 |

| Items | | | Cost per | |
|--|----------|------|----------|---------|
| | Quantity | Unit | Unit | Values |
| I. Operating Income | | | | |
| 1.1 Operating Acreage | 1 | ha | | |
| 1.2 Raw product | 23,000 | kg | | |
| 1.3 Harvest loss and decoupling loss (10%) | 2300 | Kg | | |
| 1.4. Self-Consumption (5%) | 1150 | | | |
| Total net marketable product | | | | |
| | 19,665 | Kg | 300 | 5899500 |
| II. Expenses | | | | |
| 2.1 Operating Expenses | | | | |
| Ploughing and Other Soil Preparation | 1 | ha | 50000 | 50000 |
| Seed | 1 | lot | 900000 | 900000 |
| Fertilizer | | | | |
| | | | | |
| • 15-15 | 100 | kg | 400 | 40000 |
| | | | | |
| • Urea | 50 | kg | 400 | 20000 |
| Pesticides | 1 | U | 15000 | 15000 |
| Workforce | 630 | H-J | 1500 | 945000 |
| Small maintenance materials | | FF | | 40000 |
| Contribution to the maintenance of hydraulic | 1000 5 | | | |
| appliances 10% net product | 1966.5 | kg | 200 | 393300 |
| Total Expenses | | | | 2403300 |
| Net result per hectare with the project | 11654.00 | kg | 300 | 3496200 |
| Result per hectare without the Adaptation | | | | |
| Fund project | | | | 1461700 |
| Value added to the project through | | | | |
| application of adaptation measures | | | | 2034500 |

Operating Account with project – Onion (1 ha)

| Items | Quantity | Unit | Cost per
Unit | Values |
|--|----------|-----------------|------------------|---------|
| I. Operating Income | | | | |
| 1.1 Operating Acreage | 1 | ha | | 0 |
| 1.2 Raw product | 8000 | kg | | |
| 1.3 Harvest loss and decoupling loss (10%) | 800 | Kg | | 0 |
| Total net marketable product | 7200 | Kg | 300 | 2160000 |
| II. Expenses | | | | |
| 2.1 Operating Expenses | | | | |
| Ploughing and Other Soil | | | | |
| Preparation | 1 | ha | | 20000 |
| Seed | 75 | kg | 224 | 16800 |
| Fertilizer | | | | |
| • NPK | 1 | sacs de
50kg | 16500 | 16500 |
| • Urea | | | | - |
| Pesticides | 1 | U | 15000 | 15000 |
| Workforce | 630 | H-J | 1000 | 630000 |
| Small maintenance materials | | FF | | 0 |
| Total Expenses | | | | 698300 |
| Operating income per hectare without project | 4872.33 | Kg | 300 | 1461700 |

OPERATING INCOME OF THE PROJECT PER CROP

| Operating Account -Rice | | |
|--|----------|---------------|
| | For 1 ha | For 1362 ha |
| Operating income with project | 792,900 | 1,079,929,800 |
| Operating income without the Adaptation Fund project | 9,750 | 13,377,000 |
| Value added to the project through application of | | |
| adaptation measures | 783,150 | 1,066,552,800 |

| Operating Account - Potato | | |
|--|-----------|-------------|
| | For 1 ha | For 200 ha |
| Operating income with project | 4,857,000 | 971,400,000 |
| Operating income without the Adaptation Fund project | 2,901,700 | 580,340,000 |
| Value added to the project through application of
adaptation measures | 1,955,300 | 391,060,000 |

| Operating Account – Tomato | | |
|--|-----------|-------------|
| | For 1ha | For 100 ha |
| Operating income with project | 3,762,600 | 376,260,000 |
| Operating income without the Adaptation Fund project | 1,461,700 | 146,170,000 |
| Value added to the project through application of | | |
| adaptation measures | 2,300,900 | 230,090,000 |

| Operating Account - Onion | | |
|--|-----------|-------------|
| | For 1ha | For 100 ha |
| Operating income with project | 3,496,200 | 349,620,000 |
| Operating income without the Adaptation Fund project | 1,461,700 | 146,170,000 |
| Value added to the project through application of
adaptation measures | 2,034,500 | 203,450,000 |

SUMMARY OF THE OPERATING INCOME OF THE PROJECT WITH THE 1 762 HA

| | Rice | Potato | Tomato | Onion | Total |
|----------------|---------------|-------------|-------------|-------------|---------------|
| Operating | | | | | |
| income with | | | | | |
| project | 1,079,929,800 | 971,400,000 | 376,260,000 | 349,620,000 | 2,777,209,800 |
| Operating | | | | | |
| income without | | | | | |
| the Adaptation | | | | | |
| Fund project | 13,377,000 | 580,340,000 | 146,170,000 | 146,170,000 | 886,057,000 |
| Value added to | | | | | |
| the project | | | | | |
| through | | | | | |
| application of | | | | | |
| adaptation | | | | | |
| measures | 1,066,552,800 | 391,060,000 | 230,090,000 | 203,450,000 | 1,891,152,800 |

ASSUMPTIONS

Basic data on crop yields per hectare

| Speculation | Yield without project (kg/ha) | Yield with the Adaptation
Fund project (kg/ha) * |
|-------------|-------------------------------|---|
| Rice | 600 | 4000 |
| Potato | 10000 | 25,000 |
| Onion | 8000 | 23,000 |
| Tomato | 8000 | 24,000 |

* Data retrieved from the Directorate-General for Agriculture of Guinea Bissau

Post-harvest loss

| Speculation | Post-Harvest loss | |
|-------------|-------------------|--|
| Rice | 20% | |
| Potato | 10% | |
| Onion | 10% | |
| Tomato | 10% | |

Producers Self-Consumption

| | Quantities after post-
harvest losses | Percentage self-consumed |
|-------------|--|--------------------------|
| Speculation | kg | % |
| Rice | 3,200 | 60,9%** |
| Potato | 22,500 | 20% |
| Onion | 20,700 | 5% |
| Tomato | 21,600 | 5% |

** It is expected that instead of selling rice product, the beneficiaries use their own production to ensure their food security in rice. 60.9% of the production are reserved for this purpose.

Market Selling prices for products in Guinea-Bissau (Basic scenario)

| | Average Price*** |
|--------------|------------------|
| Speculations | F CFA/Kg |
| Rice**** | 350 |
| Potato | 1000 |
| Onion | 300 |
| Tomato | 500 |

*** Data retrieved from the technical services of the Directorate-General for Agriculture in the project's intervention regions

**** It is the price of the imported rice, if we consider that the beneficiaries would have paid the complementary rice during the drought season. The price of the local rice is between 400 and 500 FCFA. Annex 14 : Terms of reference (competencies and composition) of the Regional planning office

TERMOS DE REFERÊNCIA PARA GABINETE REGIONAL DE PLANIFICAÇÃO

I – <u>Introdução</u>

A planificação Regional pode ser entendida como um processo de coordenação e orientação das decisões de afectação dos recursos disponíveis com vista a uma eficaz concretização dos objectivos estratégicos de carácter socio-económico da região, tendo como instrumento o plano do desenvolvimento regional, que serve como um documento orientador de políticas, como suporte da intervenção dos diferentes actores no vertente socio-económico da região. O instrumento de planificação a que se refere, coaduna com um conjunto das determinações dentro do sistema de planificação de uma região.

Este processo desencadeia-se com sucesso, se existir uma estrita interacção entre os componentes do gabinete designadamente (Ministérios técnicos, autoridades políticas, organizações de base, etc.), com preocupações a diferentes dimensões no quadro das estratégias do desenvolvimento estabelecido.

II- Medidas para Criação do Gabinete

Na altura do Partido único (PAIGC), criou-se conselhos regionais. Estes conselhos regionais tinham a competência para a elaboração de programas e da definição das acções prioritárias para o Desenvolvimento Regional e Local. Estes programas são enviados e apresentados ao Governo Central, o qual lhe cabe determinar a prioridade das prioridades no âmbito da definição das estratégias de desenvolvimento socio-económico do País. No entanto, foi uma forma de desconcentração do poder da decisão, apesar que o Governo Central continua a tomar decisões relacionadas com as questões regionais.

Nos meados do ano 1980/81 efectivamente houve uma tentativa com ajuda do Governo Holandês implementar medidas de desconcentração, com vista ao reforço das capacidades das iniciativas e das estruturas administrativas locais. E ainda com a colaboração da DU de Alemanha, criou-se Delegacias do plano á nível das regiões no quadro de implementação dos projectos integrados. No ano 81/82 foram criados GPR na sequência de elaboração e implementação do 1º Plano Quadrienal que são dirigidos pelos Governadores Regionais e Apoiados tecnicamente pelos Delegados Regionais do Plano.

Estes deveriam funcionar como espaço de concertação, coordenação, Identificação, aprovação, controle, seguimento e avaliação de forma crítica das acções do desenvolvimento das regiões.

III--Objectivos Gerais

Os objectivos fundamentais que visam a criação do Gabinete de Planificação Regional são:

- Assegurar uma boa localização dos projectos com intuito de atingir o desenvolvimento sustentável da região concernente;
- Definir quais os projectos a iniciar e onde localizá-los optimamente, tendo em conta os objectivos do desenvolvimento fixados pelo País;
- Seleccionar os projectos prioritários na medida do possível, tomando em consideração as estratégias da política do desenvolvimento da região;
- Harmonizar a localização dos projectos de Desenvolvimento em relação aos recursos físicos e a população da região;
- Apoiar as autoridades regionais administrativas na elaboração do seu próprio Plano do Desenvolvimento;
- Velar pela utilização coerente dos fundos destinados aos projectos, ONG's e Associações de Base;

- Considerar veementemente a repartição espacial do território, evitando dos eventuais agravamentos ou desequilíbrios;
- Dinamizar e reactivar os GPR;
- Inteirar da mobilização e utilização das receitas pública da região;
- Promover o reforço de capacidades dos quadros regionais;
- Harmonizar as políticas do desenvolvimento regional com base nos Planos nacionais, DENARP e OMD.

IV- Funções

As funções dos Gabinetes Regionais de Planificação em linhas gerais são seguintes:

- Análise dos projectos contidos nos Planos Nacionais a partir do ponto de vista do desenvolvimento regional, que pela norma estabelecida, cada projecto de âmbito regional deve passar pelo Gabinete de Planificação Regional da Região concernente, antes de ser submetido para o PIP (Programa de Investimento Público) ou uma solicitação de financiamento;
- Identificação e acompanhamento da execução dos projectos contidos no Plano Nacional a fim de apoiá-los e adequá-los de melhor forma possíveis as realidades locais;
- Os GPR capacitar-se-ão para elaboração verdadeira e estratégica dos projectos do desenvolvimento, as quais deverão ser harmonizadas e adequadas aos Planos Nacionais e as Políticas Ministeriais de desenvolvimento para as regiões;
- 4. Assegurar os trabalhos da Coordenação, Seguimento e Avaliação das Acções Programadas numa perspectiva de coerência a nível das regiões;
- Apoiar as autoridades regionais na elaboração dos Planos do Desenvolvimento das regiões inspiradas no DENARP e OMD e conforme as realidades específicas de cada região.

<u>Gabinete Regional de Planificação (GRP)</u> – É o órgão consultivo para intervenção de diferentes actores no processo de desenvolvimento das regiões.

V- Composição dos Gabinete Regional de Planificação (GRP)

Ele é composta por:

- Presidente (Governador Regional);
- Secretário Executivo (Diretor Regional do Plano e Estatística);
- Secretário do Gabinete Regional de Planificação (Secretário Administrativo Regional);
- Direcção Regional da Educação;
- Direcção Regional de Saúde;
- Direcção Regional de Agricultura;
- Delegacia Regional de Luta Contra a Pobreza;
- Delegacia Regional dos Recursos Naturais;
- Direcção Regional de Comércio;
- Delegacia Regional de Obras Publicas, Construção e Urbanismo;
- Delegacia Regional das Finanças;
- Delegacia Regional de Turismo e Artesanato;
- Delegacia Regional da Energia;
- Delegacia Regional das Pescas da zona Leste;
- Delegacia Regional da Justiça;
- Delegacia Regional de Registo Civil;

- Delegacia Regional da Juventude Cultura e Desporto;
- Delegacia Regional da Viação e Transporte;
- Delegacia Regional de Meteorologia;
- Delegacia Regional da Viação e Transporte;
- Delegacia Regional de Meteorologia;
- Guarda-fiscal Regional;
- Outros Ministérios técnicos sedeados na região;
- Representante das ONG's Nacionais e Estrangeiras;
- Representante de Instituto de Mulher e Crianças;
- Representante de Comunicação Social.

Para as reuniões alargadas do GPR, deve-se contar com as seguintes presenças:

- Sociedade Civil (representante);
- Representante de Entidades Religiosas;
- Representante de Anciões;
- Representante de Sociedade Tradicional.

VI- Funcionamento

O GRP funciona como a seguir se apresenta:

- O GRP é presidida pelo Governador da Região que é o Presidente da GRP, em caso da sua ausência, é assegurada pelo Secretário Executivo;
- As Delegacias, Direcções, Representações, Coordenações participam na reunião como membros do GRP e podem ser atribuídos qualquer tarefa;
- Nas reuniões de GRP, os membros efectivos podem ser acompanhados por seus adjuntos, quando for necessário
- A ausência de um membro efectivo numa reunião do GRP, pode delegar o seu adjunto o qual se considera como membro ao GRP, para a referida reunião;
- O GRP reúne-se ordinariamente de 2 em 2 meses e extraordinariamente sempre que necessário sob a convocatória do seu Presidente ou ainda por 2/3 dos seus membros efectivos;
- Uma reunião constituirá quórum quando a plenária é constituída por 2/3 dos seus membros em pleno gozo dos seus direitos;
- As decisões são tomadas pela maioria ou 2/3 dos seus membros em pleno gozo dos seus direitos;
- As resoluções finais de cada encontro do GRP devem ser lida e aprovada no final do encontro;
- As actas de cada encontro devem ser apresentados e submetidos para a aprovação no inicio de cada reunião;
- As despesas de funcionamento são asseguradas pelo Comité de Estado da Região;
- O Ministério da Administração Territorial deve responsabilizar-se com o fornecimento dos materiais didácticos contando com o apoio técnico da Secretaria de Estado do Plano e Integração Regional.

VII- Competências

Compete ao GRP:

- Convidar outras pessoas para assistir as suas reuniões sem serem membros em pleno gozo dos direitos;
- Estudar e dinamizar as orientações básicas sobre as estratégicas do Desenvolvimento Regional;

- Acompanhar a execução do Plano Nacional na região, elaborando relatório sobre andamento das actividades;
- Receber relatório das actividades de todas instituições Governamentais e ONG's e Associações de Base para a sua análise pormenorizada;
- Identificar, Formular, implementar e supervisar projectos de desenvolvimento na região, micro-projectos e/ou micro realizações e dar a assistência as tabancas mais carenciadas;
- Aprovar as actas e resoluções finais das reuniões realizadas;
- Solicitar qualquer organização Governamental, ONG's e Associações de Base para o esclarecimento de qualquer entrave;
- Assegurar a coordenação e harmonizar as actividades das diferentes instituições na região.

VIII- Competências do Presidente do GRP

a) Compete ao PGRP:

- Presidir as reuniões de GRP;
- Analisar e aconselhar sobre algo que possa favorecer o desenvolvimento harmonioso do GRP;
- Zelar no máximo para que haja um normal funcionamento do GRP e do cumprimento do regulamento interno;
- Comunicar o Secretário Executivo para convocação das reuniões de GRP sempre que for necessário.

b) Competências do Secretário Executivo:

Compete-lhe:

- Convocar as reuniões do GRP, com a comunicação prévia do Presidente; a convocação e presidência lhe compete em caso de ausência do Presidente;
- Apoiar o Presidente do GRP na orientação dos trabalhos de GRP;
- Manter contacto permanente com a Secretaria de Estado do Plano e Integração Regional a fim de lhe fazer inteirar dos trabalhos do GRP;
- Concertar sempre que necessário com o Presidente do GRP.

c) Competências do Secretário do GRP:

Compete-lhe:

- Preparar as propostas de ordem do dia para cada reunião do GRP em colaboração com o Secretário Executivo sob a orientação do Presidente;
- Elaborar e compilar as actas e proceder a sua distribuição atempada (15 dias) para os membros efectivos do GRP e outros individualidades assim que for necessário;
- Proceder a leitura da acta da reunião anterior no princípio de cada reunião;
- Proceder a leitura das resoluções finais no fim de cada reunião;
- Preparar e organizar os documentos que o GRP lhe designa.

Por: DDR