

**GAP ANALYSIS OF NATIONAL AND REGIONAL FISHERIES AND
AQUACULTURE PRIORITIES AND INITIATIVES IN WESTERN AND
CENTRAL AFRICA IN RESPECT TO CLIMATE CHANGE AND DISASTERS**



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GAP ANALYSIS OF NATIONAL AND REGIONAL FISHERIES AND AQUACULTURE PRIORITIES AND INITIATIVES IN WESTERN AND CENTRAL AFRICA IN RESPECT TO CLIMATE CHANGE AND DISASTERS

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PREPARATION OF THIS DOCUMENT

This Circular and a similar Circular for Southern and Eastern Africa have been undertaken as part of the pan-African NEPAD-FAO Fish Programme (NFFP) Component C (FMM/GLO/003/MUL). The Circular aims to provide a baseline of comparable information on key priorities identified at national and regional levels with regard to fisheries and aquaculture in respect to disaster risk management (DRM) and climate change adaptation (CCA), and vice versa. It also aims to map where actions are in place to implement these priorities and where gaps exist. A total of 23 countries, 16 of which are least developed countries (LDCs), were considered for this study.

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ABSTRACT

African fishers and fish farmers are particularly vulnerable to disasters and climate change impacts. The objective of the study was to identify regional and national gaps and opportunities to reduce the vulnerability of the sector to impacts from climate change and increase the resilience of fisheries and aquaculture livelihoods to disasters. The identification of gaps and opportunities were made through a combination of a survey, website searches and reviews of documents – including policies and strategies – that contain fisheries/aquaculture and climate change adaptation (CCA)/disaster risk management (DRM) aspects. Identified national and regional priorities were compared to actions in place and thus gaps were identified. A total of 23 countries, 16 of which are least developed countries (LDCs), were considered for Western and Central Africa. A regional workshop on climate change, disasters and crises in the fisheries and aquaculture sector in Western and Central Africa was held in Accra, Ghana on 1–2 November 2012 to provide input into the gap analysis process and provide recommendations for addressing climate change adaptation and disaster risk management in fisheries and aquaculture. Overall, 27 gaps or recommendations were identified. These are presented in Chapter 4, with reference to their source and in respect to the four areas of adaptation and disaster risk management action, namely:

- strengthened governance to address disasters and climate change impacts affecting fisheries and aquaculture;
- addressing and reducing underlying risks through prevention and adaptation measures;
- managing effective response and improving preparedness for disasters and climate change; and
- improved early warning systems and availability of information.

These gaps and recommendations provide specific and general suggestions for those considering supporting the development of actions in the area of fisheries/aquaculture and CCA/DRM in Western and Central Africa. The findings will also be used to inform advice for the formulation of the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa.

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ACRONYMS AND ABBREVIATIONS

AAP	African Adaptation Programme (UNDP)
ACCC	Adaptation Project for West Africa
ACCCA	Advancing Capacity to support Climate Change Adaptation (UNITAR)
ADF	African Development Fund (African Development Bank)
ADPC	Asian Disaster Preparedness Centre
AfDB	African Development Bank
AGRHYMET	Centre régional de formation et d'application en agrométéorologie et hydrologie opérationnelle
AMCEN	African Ministerial Conference on Environment
ANAF	Aquaculture Network for Africa
APPECCAO	Adapting fishing policy to climate change in West Africa using scientific knowledge and indigenous knowledge
ARD	agriculture and rural development
ASCLME	Agulhas and Somali Current Large Marine Ecosystems
AWG	Aquaculture Working Group of NPCA/PAF
AU	African Union
AUC	African Union Commission
AU-IBAR	African Union – Interafrican Bureau for Animal Resources
BCLME	Benguela Current Large Marine Ecosystem
BCPR	Bureau for Crisis Prevention and Recovery (UNDP)
BMZ	Federal Ministry for Economic Cooperation and Development (Germany)
CAADP	Comprehensive Africa Agriculture Development Programme
CAFRS	Comprehensive African Fisheries Reform
CAMFA	Conference of African Ministers for Fisheries and Aquaculture
CAR	Central African Republic
CCA	Climate Change Adaptation
CCAA	Climate Change Adaptation in Africa
CC-DARE	Climate Change Adaptation and Development Initiative (UNDP and UNEP)
CCLME	Canary Current Large Marine Ecosystem
CCRF	Code of Conduct for Responsible Fisheries
CDSF	ClimDev Special Fund
CEAO	Communauté économique de l'Afrique de l'Ouest
CECAF	Committee for the Eastern Central Atlantic Fishery
CEMAC	Central African Economic and Monetary Community
CEN-SAD	Community of Sahel–Saharan States
CIDA	Canadian International Development Agency
CIFAA	Committee on Inland Fisheries and Aquaculture in Africa
CILSS	Permanent Interstate Committee for Drought Control in the Sahel

CLIVAR	Climate Variability and Predictability Project of the World Climate Research Programme
CNSHB	National Centre for Fisheries Sciences Boussoura and Research Center scientists, Conakry
COFI	Committee on Fisheries (FAO)
COMESA	Common Market for Eastern and Southern Africa
COMIFAC	Central African Forests Commission
COP	Conference of the Parties to UNFCCC
COREP	Regional Fisheries Committee for the Gulf of Guinea
CPF	Country Programme Framework (FAO)
CSCDDR	Civil Society Coalition on Disaster Risk Reduction (Nigeria)
DEFRA	Department for Environment, Food and Rural Affairs
DFID	Department for International Development
DRC	Democratic Republic of Congo
DRM/R	disaster risk management/reduction
EAF/A	ecosystem approach to fisheries/aquaculture
ECCAS	Economic Community of Central African States
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
EEZ	exclusive economic zone
ENDA–TM	Environment and Development in the Third World
ENSO	El Niño-Southern Oscillation
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FARA	Forum for Agricultural Research in Africa
FCWC	Fishery Committee of West and Central Gulf of Guinea
FI	Fisheries and Aquaculture Department (FAO)
FIBA	Fondation internationale du Bassin d’Arguin
FMM	FAO Multipartner Mechanism
FP DRR	Framework Programme on Disaster Risk Reduction
GCLME	Guinea Current Large Marine Ecosystem
GEF	Global Environment Facility
GIZ	Gesellschaft für Internationale Zusammenarbeit (Germany)
ICC	Interdepartmental Coordinating Committee (ECOWAS)
ICPAC	IGAD Prediction and Application Centre
IDA	International Development Association (World Bank)
IDID-ONG	Initiatives pour un développement intègre durable
IDRC	International Development Research Centre (Canada)
IDWG-CC	Interdepartmental Working Group – Climate Change (FAO)
IFAD	International Fund for Agricultural Development

IFR	International River Foundation
IFRC	International Federation of the Red Cross and Red Crescent Societies
IGAD	Intergovernmental Authority for Development
INDP	National Institute of Fisheries Development in (Cape Verde)
IOC	Indian Ocean Commission
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IPCC	Intergovernmental Panel on Climate Change
IPOA	International Plan of Action
IUCN	International Union for the Conservation of Nature
IUU	illegal, unreported and unregulated (fishing)
JICA	Japan International Cooperation Agency
LCBC	Lake Chad Basin Commission
LDC	least developed countries
LDCF	Least Developed Countries Fund (GEF)
LME	large marine ecosystem
MDG	Millennium Development Goal
MTP	medium term plan
NAPA	National Adaptation Programme of Action
NEPAD	New Partnership for Africa's Development
NEST	Nigeria Environmental Study/action Team
NFFP	NEPAD - FAO Fish Programme
NGO	Non-governmental organization
NIFFR	National Institute for Freshwater Fisheries Research (Nigeria)
NPCA	NEPAD Planning and Coordinating Agency
OIE	Organization for Animal Health
OMVS	Organization for the Development of the Senegal River Basin
PaCFA	Global Partnership for Climate, Fisheries and Aquaculture
PAF	Partnership for African Fisheries (DFIF/NEPAD)
PIF	Project Identification Form (GEF)
PRCM	Coastal and Marine Protected Areas in West Africa
PRODEBALT	Programme de développement durable du bassin du lac Tchad
PRS(P)	Poverty Reduction Strategy (Paper)
RBO	River Basin Organization
REC	Regional Economic Commission
REPAO	Le Réseau sur les Politiques de Pêche en Afrique de l'Ouest
RFB	regional fisheries body
RFMO	regional fisheries management organization
RLO	Regional Lake Organization

SADC	Southern African Development Community
SASKI	Sustainable Agriculture Systems, Knowledge and Information
SCCF	Special Climate Change Fund (GEF)
SFAA	FAO FI Strategy for Fisheries and Aquaculture in Africa
SIF	Stop Illegal Fishing Working Group of NPCA/PAF
SO	strategic objective
SPFIF	Strategic Partnership for Sustainable Fisheries Investment Fund
SRFC	Subregional Fisheries Commission
SWIOFC	South West Indian Ocean Fisheries Commission
SWIOFP	South West Indian Ocean Fisheries Project
UNCED	United Nations Conference on Environment and Development
UNDAF	United Nations Development Action Framework
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
UNITAR	United Nations Institute for Training Research
UNOCHA	Office for the Coordination of Humanitarian Affairs
USAID	United States Agency for International Development
USD	United States Dollar
WAEMU	West African Economic and Monetary Union
WARF	West Africa Rural Foundation
WCDR	World Conference on Disaster Reduction
WFP	World Food Programme (UN)
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature

1. Executive summary

African fishers and fish farmers are highly vulnerable to natural disasters owing to their location at the interface of land and water which exposes them to storms, cyclones and hurricanes, with associated flooding and tidal surges, tsunamis, earthquakes, droughts, floods and landslides. They are also vulnerable to disasters of human origin such as oil and chemical spills, changes in food and nutrition security, conflicts, protracted crises and health pandemics and sector-specific hazards and disasters, including transboundary aquatic animal diseases and pest outbreaks. The effects of these disasters include loss of human life and the loss of assets such as boats, gear, cages, aquaculture ponds, fish and brood stock, processing facilities and landing sites. The typically weak social and economic situation of those involved in fisheries and aquaculture makes them, and their communities, highly vulnerable to these events, with limited capacity to anticipate, adapt and recover from the effects of disasters.

This study and a companion study for Southern and Eastern Africa have been undertaken as part of the pan-African NEPAD-FAO Fish Programme (NFFP¹) Component C. The study aims to provide a baseline of comparable information on key priorities identified at national and regional levels with regard to fisheries and aquaculture and in respect to disaster risk management (DRM) and climate change adaptation (CCA), and vice versa. Another aim is to map where actions are in place to implement these priorities and document where gaps exist. A total of 23 countries, 16 of which are least developed countries (LDCs), were considered for this study of Western and Central Africa.

In respect to identifying regional gaps, firstly regional and sub-regional frameworks (including policies, strategies or agreements) that contain fisheries/aquaculture and CCA/DRM aspects were identified. Thirteen such frameworks exist. Of these², four focus on fisheries and aquaculture, two on disasters, five more widely on the environment and natural resources and two on the agricultural sector. Ten record the importance of the sector, mainly in relation to broader benefits associated with fisheries and aquaculture, such as its contribution to livelihoods and food security and the importance of the sector to GDP. The vulnerability of coastal communities to disasters is vaguely covered in the frameworks, with the exception of those of the Large Marine Ecosystems (LMEs) and the Regional Fisheries Body (RFB) of the Fisheries Committee of West and Central Gulf of Guinea (FCWC) where the core issues facing the sector are noted. Adaptation activities are proposed in five of the more recent documents. These include region-wide generic policy level interventions such as the establishment of national platforms; mainstreaming Disaster Risk Reduction (DRR) into development planning; and the establishment of effective DRR structures within member states. Fisheries specific priority actions include mainstreaming climate change in fisheries policies and programmes; improving knowledge of the fisheries; promoting ecosystem approaches to management; developing baseline information; and strengthening cooperation.

The next step was to pinpoint the gaps between the identified needs and what is, or has been done, to address these needs at a regional level. Through a combination of a survey, website searches and a review of documents, 55 projects were identified that operate at a global, continental or sub-regional level and address these needs. Thirty one of these projects were found to be CCA or DRM projects that

¹ The New Partnership for Africa's Development (NEPAD) and the United Nations Food and Agriculture Organization's (FAO) joint fisheries and aquaculture programme.

² These are the NEPAD Action Plan for the Development of African Fisheries and Aquaculture; the African Union (AU) record of the Conference of African Ministers of Fisheries and Aquaculture (CAMFA); the AU Strategy for Disaster Risk Reduction (DRR); NEPAD Environmental Action Plan; the Economic Community of West African States (ECOWAS) Regional Agricultural Policy (ECOWAP); ECOWAS DRR Programme of Action; ECOWAS Environmental Policy; ECOWAS CAADP; the Canary Current Large Marine Ecosystem (CCLME) Project Document; the Guinea Current Large Marine Ecosystem (GCLME) Strategic Action Programme (SAP); the Lake Chad Basin Commission (LCBC) SAP; the Strategic Implementation Programme of the Fisheries Committee of West and Central Gulf of Guinea (FCWC); and the Regional Fisheries Committee for the Gulf of Guinea (COREP) SAP.

are directed specifically at fisheries and aquaculture. The primary common gap identified – where needs were identified but limited activities were found to address them – was in respect to support for the inclusion of fisheries/aquaculture in existing CCA/DRM policy and strategy processes and vice versa, and specifically to ensure the identification of actions to address appropriate vulnerabilities. This gap was found to be particularly applicable to the Economic Community of West African States (ECOWAS) Programme of Action (2010–2014) for DRR, the African Regional Strategy for DRR and the Conference of African Ministers of Fisheries and Aquaculture (CAMFA) process, including the related Comprehensive African Fisheries Reform Policy and Strategy. Other opportunities identified included:

- to strengthen regional research that provides improved understanding of climate change impacts and knowledge to reduce uncertainty in the Canary Current Large Marine Ecosystem (CCLME) countries;
- to support the implementation of the FCWC 2011–2020 Strategic Implementation Programme with regard to its climate-change components;
- to strengthen partnerships between organizations, share practical lessons on CCA and DRM and improve strategic planning to increase resilience; and
- to strengthen interventions underway in RFBs and shared water bodies to relate more specifically to CCA/DRM, with the aim of mainstreaming and addressing vulnerabilities.

With the objective of identifying gaps at country level, the following national documents were mapped using four criteria to find information on relevant priorities: Poverty Reduction Strategy Papers (PRSP); the United Nations Development Action Frameworks (UNDAF); the Comprehensive Africa Agriculture Development Programme (CAADP); the National Adaptation Programmes of Action (NAPAs); the National Communications; and the Review of Current and Planned Adaptation Action (2011). Overall, the NAPAs and National Communications (both climate change frameworks) were the most inclusive of fisheries and aquaculture concerns, while the least specific were the UNDAFs and national CAADP compacts, which quite often did not mention the sector at all, or only mentioned some quite general actions. In total, 118 documents were mapped and specific vulnerabilities and actions identified. A total of 46 projects or interventions were identified that addressed these priority needs; 22 of them were CCA and DRM projects that directly incorporated fisheries or aquaculture. The main gaps with regard to required support relate to:

- developing aquaculture and integrated fish farming as an adaptation measure in itself to increase the resilience of communities through diversifying food sources and to introduce CCA and DRM measures into aquaculture to reduce the risks in times of crisis;
- strengthening measures and actions to stop illegal and overfishing, so as to improve the access of vulnerable communities to resources (especially in times of crisis) and thus reduce the risks they are exposed to, including the effects of climate change and disasters;
- increasing the resilience of individuals and their communities through diversification of livelihood options to include non-fisheries related activities; and
- improving post-harvest handling and developing the processing and marketing of products so as to reduce post-harvest losses and improve the food security and wellbeing of individuals and communities.

In addition to the above approach, gaps were identified in the recommendations made by experts and stakeholders across a range of documents and reports. These recommendations were often more general than country or sub-region-specific. They were organized into four sections: actions to be taken through sub-regional/regional projects, programmes and/or bodies; country-specific actions; actions with regard to local, national, regional CCA/DRM plans and implementation; and other relevant actions.

A sub-regional workshop on climate change, disasters and crises in the fisheries and aquaculture sector in West and Central Africa was held in Accra, Ghana, on 1 to 2 November 2012, with the purpose of providing input into the gap analysis process and providing recommendations for addressing CCA and DRM in fisheries and aquaculture. The recommendations concerning improving the resilience of

vulnerable fishing communities to climate related change and disasters were with respect to the need for strengthened co-management arrangements, coastal management plans and coping with the migration of people into fishing community areas. With respect to strengthening the role of aquaculture as an adaptation activity and making the sector more resilient to change, it was suggested that more attention needs to be given to this sector and that aquaculture networks might be involved in such an effort, as well as in disseminating knowledge about CCA and DRM. In terms of inland fisheries, strengthening of community-based organizations and collaboration with other food producing sectors on climate change adaptation and vulnerability reduction were particularly recommended.

Overall, 27 gaps or recommendations were identified and presented in Chapter 4 in respect to their source, and also in respect to the four adaptation action areas of:

- strengthened governance to address disasters and climate change impacts affecting fisheries and aquaculture;
- addressing and reducing underlying risks through prevention and adaptation measures;
- managing effective response and improving preparedness for disasters and climate change; and
- improved early warning systems and availability of information.

These gaps and recommendations provide specific and general suggestions for those considering supporting the development of actions in the area of fisheries/aquaculture and CCA/DRM in Western and Central Africa. The findings will also be used to inform the ongoing CAMFA process and will provide valuable insights for the formulation of the Comprehensive African Fisheries Reform Policy and Strategy.

The final chapter ranks the gaps/recommendations against criteria relevant to the selection of actions specifically for the NFFP. The top scoring actions were:

Strengthened governance to address disasters and climate change impacts affecting fisheries and aquaculture

- Promote the dissemination of gained experiences and lessons learnt in order for them to feed into national, sub-regional and regional level policies and strategies through, for example, the organization of best practices exchange workshops co-prepared and organized with RECs and/or RFBs and the development of guidelines and/or other publications.
- Support opportunities for improved policy coherence and coordination of DRM and CCA initiatives in fisheries and aquaculture, including the establishment of a working group on climate change and disasters in fisheries and aquaculture within NEPAD; and the preparation of joint policy briefs on climate change, disasters and crises to inform CAMFA.
- Strengthen interventions underway in RFBs and shared water bodies to relate more specifically to CCA/DRM, with the aim of mainstreaming and addressing vulnerabilities, as for example in the LCBC.

Addressing and reducing underlying risks through prevention and adaptation measures

- Support local, national and regional policy linkages and two-way communication through pilot activities for the development and implementation of DRM and CCA participatory plans in selected fishing/fish farming communities and countries.
- Support the implementation of priority actions in national planning where fisheries and aquaculture are mentioned, in the NAPAs of LDCs by supporting the development of project identification forms (PIFs).
- Promote approaches and practices such as EAF and EAA which contribute to reducing vulnerability of communities by developing and implementing management plans – taking into account CCA and DRM needs – and support their implementation.
- Improve post-harvest handling, develop the processing and marketing of products along the value chain and increase product diversification so as to reduce post-harvest losses and improve hygiene, with a particular focus on the role of women.

Managing effective response and improving preparedness for disasters and climate change

- Establish a framework for safety at sea in countries that are vulnerable to extreme weather events.
- Establish DRM committees, or link with co-management or community committees, trained in risk assessment, management and communication at different levels.
- Improve collaboration between fisheries administrations and national DRM institutes, with better provision for DRM support in disaster-prone areas, better information flow at all levels and across sectors, capacity building and involvement of fishing communities in national contingency planning.

Improved early warning systems and availability of information

- Establish early warning systems at local, national and international levels.
- Establish DRM committees, or link with co-management or community committees trained in risk assessment, management and communication at different levels.
- Improve collaboration between fisheries administrations and national DRM institutes, with better provision for DRM support in disaster-prone areas, better information flow at all levels and across sectors, capacity building and involvement of fishing communities in national contingency planning.

2. Introduction and background

In 2010, a total of 385 natural disasters killed around 300 000 people worldwide and affected more than 217 million others³. Over 90 percent of the people affected by weather and climate related disasters are from developing countries. The 33 least developed countries in Africa (LDCs, Figure 1) makes the continent very vulnerable to disasters. When disaster hits, it is the poor who suffer the most, especially those who are dependent on agriculture and fisheries. This is because fishers and fish farmers live at the interface of land and water, a zone of constant change and high impact for hydrological disasters, and their generally weak social and economic situation leaves them more exposed to the impacts of disaster. Climate change and disasters have different impacts on men and women, with the latter generally constituting the more vulnerable group.

The types of disasters that affect fishers and fish farmers include natural disasters such as storms, cyclones or hurricanes – with associated flooding and tidal surges – tsunamis, earthquakes, droughts, floods and landslides. The frequency and intensity of these extreme weather events are expected to increase as a result of climate change and the projected gradual global warming; this will result in an increase in the development challenges that many fishing communities face. The fisheries and aquaculture sector is also vulnerable to human induced disasters such as oil and chemical spills, nuclear or radiological material losses, changes in food and nutrition security, conflicts, protracted crises and health pandemics. Sector-specific hazards and disasters also exist, such as transboundary aquatic animal diseases and pest outbreaks that can have significant impacts on aquaculture production and fisheries.

In addition to loss of human life, the direct effects of disasters and change on the sector can include the direct loss of livelihood assets such as boats, gear, cages, aquaculture ponds, fish and brood stock, postharvest and processing facilities and landing sites⁴. However, the indirect impacts can also be extensive and may include damage to infrastructure required for accessing markets for perishable fish, an increase in waterborne diseases such as cholera and the migration of people as a result of, for example, changes in the availability of fish and adequate nutrition or shortages of freshwater.

The vulnerability of fishing and fish farming communities to the changes and hazards will depend on their degree of exposure, ability to withstand the exposure and their capacity to anticipate, adapt and recover from the effects of the hazard (also called increasing resilience). In order for individuals and communities to suffer less and cope better, adaptation to the effects of climate change and a reduction in vulnerability to disasters is essential. Achieving this requires long-term, well-structured, integrated and efficient response activities that link with development processes globally, regionally and nationally.

The next section describes international and regional frameworks and initiatives that are underway to strengthen resilience to the impacts of disasters and climate change within the fisheries and aquaculture communities of Africa. This report – and the accompanying report for Southern and Eastern Africa – provide a comprehensive gap and stakeholder analysis of national and regional fisheries and aquaculture priorities and initiatives in respect to climate change and disasters, with the goal of presenting a baseline of information to facilitate improved planning and production of activities and interventions.

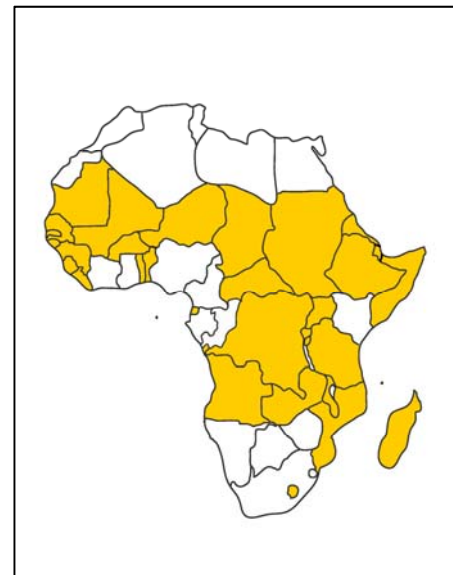


Figure 1: Least developed countries of Africa

³ Guha-Sapir, D., Vos, F., Below, R. & Ponserre, S. 2011. Annual disaster statistical review 2010: the numbers and trends. Brussels, Belgium. Centre for Research on the Epidemiology of Disasters (CRED), 42 pp.

⁴ FAO, 2012. The state of world fisheries and aquaculture. Available at www.fao.org/icalog/inter-e.htm

Box 1: Key definitions

Climate change adaptation (CCA) refers to adjustments in ecological, social or economic systems in response to actual or expected climate stimuli and their effects or impacts. This term refers to changes in processes, practices and structures to moderate or offset potential damages or to take advantage of opportunities associated with changes in climate. It involves adjustments to reduce the vulnerability of communities, regions and activities to climate change and variability. Adaptation is important in the climate change issue in two ways: one relating to the assessment of impacts and vulnerabilities; and the other to the development and evaluation of response options.

Disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Disaster risk reduction (DRR) is the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

Disaster risk management (DRM) goes beyond preparedness, prevention and mitigation, which form the core of DRR, to incorporate emergency response, recovery and rehabilitation within a management framework.

Shocks, crisis and other risks the main shocks and related risks include: natural disasters (e.g. geo-climatic and climate variability including extreme weather events originating from natural hazards - droughts, floods, storms, extreme temperatures, hailstorms-fires, landslides, volcanic eruptions, tsunamis, earthquakes, etc.); food chain emergencies of transboundary or technological threats [e.g. transboundary plant, forest, animal, aquatic and zoonotic pests and diseases (with high impact), food safety events, radiological and nuclear emergencies, dam failures, industrial pollution, oil spills, etc.]; socio-economic crises (e.g. the global food price crisis and financial shocks); violent conflicts (e.g. civil unrest, regime change, interstate conflicts, civil wars, etc.); and protracted crises (i.e. complex, prolonged emergencies that combine two or more aspects of the above-mentioned shocks).

UNISDR 2009. Global assessment report on disaster risk reduction. United Nations Office for Disaster Risk Reduction (UNISDR). ISBN/ISSN: 9789211320282. 207 pp. Available at www.unisdr.org/we/inform/publications/9413

2.1 The global response to climate change and disasters

There are good reasons for Africa to integrate and link its response to climate change adaptation (CCA) and to disaster risk management (DRM) within the global context. These include the need to reduce fragmentation of development efforts⁵; to contribute to, and benefit from, global monitoring and coordination initiatives⁶; to benefit from lesson learning and exchange; and to be able to access global support funds. In the following paragraphs, a brief overview of the global response to climate change and disasters, generally and in respect to fisheries and aquaculture, is provided.

⁵ In line with the Paris Declaration on Aid Effectiveness. The Paris Declaration, endorsed on 2 March 2005, is an international agreement that seeks to harmonize, align and manage aid to achieve results; it has a set of measurable actions and indicators.

⁶ Such as the call for the integration of all available information on how the seas and oceans are being used. This call was made by the Group of Experts in relation to the UN Regular Process for Global Reporting and Assessment of the State of the Marine Environment (UNEP & IOC– UNESCO, 2009).

For the fisheries and aquaculture sub-sector, the generally accepted overarching governance framework is that of an ecosystem approach to fisheries⁷ (EAF) and aquaculture⁸ (EAA). These approaches aim to support the implementation of the provisions of the 1995 FAO Code of Conduct for Responsible Fisheries and thereby achieve sustainable development in the fisheries and aquaculture contexts. The EAF and EAA provide holistic solutions to fisheries management and include the biotic, abiotic and human components of the systems in which fisheries operate. They also promote the implementation of adaptive and precautionary approaches to management. The global EAF-Nansen project works with the Large Marine Ecosystem (LME) projects and programmes and assists countries and regions to practically implement these approaches and strengthen the management of fisheries and aquaculture sectors.

In 2012, FAO engaged in a participatory process that involved more than 4 000 representatives of small-scale fishing communities, governments, regional organizations, civil society and academia to support the development of a set of International Guidelines on Securing Sustainable Small-Scale Fisheries⁹. Chapter 10 of this report deals with vulnerabilities of small-scale fishing communities in the context of disaster risks and climate change, with a focus on empowerment within a human rights-based approach, and offers a useful framework for reducing vulnerability and increasing resilience of small-scale fishing communities.

The Rio+20 Conference (June 2012) marked 20 years since the United Nations Conference on Environment and Development (UNCED) and ten years since the World Summit on Sustainable Development (WSSD). The conference included world leaders, governments, the private sector, NGOs and other groups and produced a shared vision for the sustainable development of the planet called “The future we want”¹⁰. This document recognized the role of fisheries and aquaculture in sustainable development and the need to promote sustainable fisheries and aquaculture in a manner that improves food security while enhancing resilience to climate change and natural disasters. It draws attention to disaster risk reduction (DRR) and the need to integrate DRR and resilience into wider development plans – a message that is being repeated in many forums. It also highlights the need to ensure access to fisheries, and the importance of access to markets, by subsistence, small-scale and artisanal fishers and women fishworkers, as well as indigenous peoples and their communities – particularly in developing countries and Small Island Developing States (SIDS).

The global response to climate change has been led by the United Nations Framework Convention on Climate Change (UNFCCC) of 1992 which acknowledged that climate change was inevitable, that efforts were required to slow global warming and that preparing for the impacts of climate change was also essential. Through the UNFCCC process, the Special Climate Change Fund (SCCF) was established in 2001 to finance long-term planned response strategies, policies and measures relating to CCA, technology transfer and capacity building. In 2002, the Least Developed Countries Fund (LDCF) was established especially to assist LDCs in preparing and implementing their National Adaptation Programmes of Action (NAPAs). These are tools specifically developed for LDCs to analyse their vulnerability to climate change and identify specific measures to reduce them.

⁷ The purpose of EAF is to plan, develop and manage fisheries in a manner that addresses the multiple needs and desires of societies, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by the marine ecosystem. FAO. 2003. The ecosystem approach to fisheries. Food and Agriculture Organization of the United Nations Technical Guidelines for Responsible Fisheries, FAO Fisheries Department No. 4, Suppl. 2. Rome, FAO. 112 pp.

⁸ An ecosystem approach to aquaculture (EAA) is similar to the EAF and has been defined as: “a strategy for the integration of the activity within the wider ecosystem such that it promotes sustainable development, equity and resilience of interlinked social-ecological systems.”

FAO. 2010. Aquaculture development. 4. Ecosystem approach to aquaculture. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 4. Rome, FAO. 53 pp.

⁹ FAO. 2012. Available at

ftp://ftp.fao.org/Fi/DOCUMENT/ssf/SSF_guidelines/ZeroDraftSSFGuidelines_MAY2012.pdf

¹⁰ https://rio20.un.org/sites/rio20.un.org/files/a-conf.216l-1_english.pdf.pdf

The United Nations International Strategy for Disaster Reduction (UNISDR) of 1999, serves as the United Nations' focal point for the coordination of DRR and DRR activities. The Hyogo Framework for Action¹¹ was adopted by the World Conference on Disaster Reduction (held in Hyogo, Japan in 2005) and aims to build disaster resilient communities and countries within the remit of coordinated and integrated sustainable development. It integrates DRR into sustainable development policies and planning, developing and strengthening institutions, mechanisms and capacities to build resilience to hazards and incorporating risk reduction approaches into emergency preparedness, response and recovery programmes.

The World Organization for Animal Health¹² (OIE) is the intergovernmental organization responsible for improving animal health worldwide. In recent years, its role in respect to global surveillance, monitoring and rapid response mechanisms to infectious animal diseases – including those transmissible to humans – has increased. The organization also works closely with the FAO and the World Health Organization (WHO) in times of animal and public health emergencies which are often linked to disasters and the spread of disease. For fisheries, transboundary aquatic animal diseases and pest outbreaks can be critical and require careful monitoring.

FAO is undergoing a transformation process, with a new ten-year Strategic Framework due to be implemented in January 2014. Through one of its five new Strategic Objectives, the organization will help to increase the resilience of livelihoods to threats and crises¹³. Proposals for implementation include priorities within Africa, especially areas suffering from ongoing crises such as the Sahel and the Horn of Africa region. In West Africa and the Sahel sub-region, FAO has elaborated a strategic framework for DRM planning and activities, with the overall objective to strengthen community resilience and reduce their vulnerability to various shocks. The strategy aims to support the countries of the sub-region to become more food secure and enable them to focus on developing sustainable food and agriculture systems¹⁴. This strategy is implemented in partnership with involved national governments; the Economic Community of West African States (ECOWAS); sub-regional institutions such as the Permanent Interstate Committee for Drought Control in the Sahel (CILSS); the UN agencies, particularly the World Food Programme (WFP); the Office for the Coordination of Humanitarian Affairs (UNOCHA); the International Federation of Red Cross and Red Crescent Societies (IFRC); NGOs; and other stakeholders in the sub-region. Specifically within the fisheries and fish farming sub-sector, FAO has initiated a programme of consultation with partners at the global level where the synergies between managing climate change and DRR were explored. In Bangkok, Maputo¹⁵ and San José, consultations with partners addressed regional issues. The integration of fisheries/aquaculture and DRM/CCA was discussed and options for taking this integration forward were outlined; outcomes were endorsed at the 29th Session of the Committee on Fisheries (COFI) in 2011.

¹¹ www.unisdr.org/we/coordinate/hfa

¹² www.oie.int/

¹³ The fifth strategic objective encompasses four organizational outcomes: legal, policy, institutional systems and regulatory frameworks are enhanced for disaster and crisis risk management for agriculture, nutrition, food security and food safety; known and emerging food, nutrition and agriculture threats are identified, forecast, analysed, monitored and used to trigger appropriate decisions and actions; capacities are strengthened for prevention, as well as for impact mitigation to reduce the probability and severity of disasters and crises that threaten food and agriculture systems; and disasters and crises affecting agriculture and food systems are effectively and accountably managed, including preparedness, robust responses and effective post-crisis transitions.

¹⁴ www.fao.org/fileadmin/templates/tc/tce/pdf/DRM_Strategy_Sahel_2011-2013_web.pdf

¹⁵ For example, the draft Background Paper for Outcome 3 "Programme in Support to the Implementation of the FAO Fisheries and Aquaculture Strategy in Africa" (GCP/RAF/463/MUL) – SIDA AFRICA Programme or "Hard rains and strong tides: a review of African region fishery sector initiatives and programmes on climate change and disaster risk management" (FAO, 2011) or "Reduced vulnerability of fishing and fish farming communities to natural disasters in Africa" (FAO, 2010).

2.2 The African context

African efforts to improve sustainable development within the agriculture sector, and specifically fisheries and aquaculture, have increased over the last few decades and are continuously being strengthened. However, as noted in the global process and at the 29th Session of COFI, the integration of these efforts is often lacking. For example, the flagship programme of the African agricultural sector is the Comprehensive Africa Agriculture Development Programme (CAADP) of the New Partnership for Africa's Development (NEPAD). It aims to eliminate hunger and reduce poverty through agricultural growth, increasing public investment in agriculture to a minimum of ten percent of national budgets, in order to increase agricultural productivity – including fisheries – by at least six percent¹⁶. However, the integration of fisheries and aquaculture into the CAADP process was very slow until the formation of the Conference of African Ministers for Fisheries and Aquaculture (CAMFA) under the auspices of the African Union (AU) in 2010. In that year, the Conference requested member states, Regional Economic Communities (RECs) and Regional Fisheries Bodies (RFBs) to mainstream climate change in fisheries policies, development and management programmes. In response to this, and in light of the gap in NEPAD's Partnership for African Fisheries (PAF) in respect to climate change and disasters, NEPAD and the FAO developed the joint NEPAD-FAO Fish Programme (NFFP)¹⁷ with a specific component that aims to assist in incorporating CCA and DRM into fisheries governance. This component, known as Component C, focuses on the need to develop and integrate DRM and CCA plans into fisheries and aquaculture strategies, and vice versa, at local (community), national and regional levels.

The flagship programme and primary mechanism of DRR in Africa is the extended programme of action for the implementation of the Africa Regional Strategy for DRR (2006–2015) with the goal to substantially reduce social, economic and environmental impacts of disasters on African people and economies, thereby facilitating the achievement of the MDGs and other development aims in Africa. The objectives include mainstreaming DRM and CCA into sustainable development, strengthening capacity, developing and maintaining policies and sustainable coordination mechanisms at regional and sub-regional and national levels, and mobilising resources. Priority programme components are based on major identifiable gaps in political commitment, public awareness and capacity development and are jointly implemented by AU member states, RECs, the NEPAD Planning and Coordination Agency (NPCA), UN Agencies, development partners, civil society organizations and other relevant institutions including the Africa Working Group on DRR.

Important milestones in the African DRR process have been the second African Ministerial Conference on DRR organized by the AUC with the support of the UNISDR and the Government of Kenya, held in Nairobi, Kenya, in April 2010;¹⁸ and the 4th Africa Regional Platform for DRR, held in Arusha, United Republic of Tanzania, in February 2013, also facilitated by UNISDR. The functions of the Regional Platform are to be the primary regional mechanism to support the implementation of DRR strategies and programmes at regional, sub-regional and national levels; and to monitor their progress and facilitate coordination and information-sharing between governments, sub-regional organizations and UN agencies¹⁹. The platform is supported by the RECs that provide strategic guidance to countries; facilitate sub-regional strategies and programmes; coordinate inter-state initiatives; establish sub-regional DRR platforms and focal points; and mobilize resources for national and sub-regional efforts. At the national and local levels, multi-stakeholder national platforms or committees exist, including DRR-

¹⁶ CAADP website, available at www.nepad-caadp.net/about-caadp.php.

¹⁷ The overall objective of the NFFP is to develop capacities for improving governance, in particular at the regional and sub-regional levels, while at the same time supporting local and national level efforts with regard to responsible fisheries and social and economic development. The Programme consists of three components: (i) enhanced multi-level governance, policy coherence and economic integration; (ii) improved management through the EAF/EAA; and (iii) reduction of vulnerability through DRM and CCA, as well as cross-cutting issues, such as gender.

¹⁸ www.unisdr.org/we/inform/publications/19613

¹⁹ www.unisdr.org/we/inform/events/30143

related ministries, civil society organizations, media, private sector, scientific and educational institutions, that contribute skills and knowledge to the process of mainstreaming DRR and CCA into multi-sectoral development planning and implementation.

From an environmental perspective the NEPAD Environmental Action Plan (2003) tackles both the sustainable development of Africa's fisheries and adaptation to climate change, but neither theme is incorporated into the other in the Action Plan. NEPAD is also implementing a Climate Change and Natural Resource Management Programme²⁰ that aims to play a coordinating and advocacy role, in order to promote regional and national programmes that counteract the environmental threats related to climate change. The programme brings together relevant regional and continental players to coordinate, share knowledge and encourage one another in addressing the threat of climate change. Its objective is to assist countries in integrating climate change responses into their national development processes. In NEPADs "Strategic Direction 2010 to 2013", attention is given to the cross-cutting issues of capacity building, gender and the environment, with environmental action plans being seen as key to strengthening the ability of member states to integrate climate change responses into national development processes and to provide capacity building and technical support.

In response to the limited knowledge of frameworks, interventions and players in the areas of potential overlap between African fisheries and aquaculture and CCA and DRM, the need for a comprehensive gap and stakeholder analysis was identified by stakeholders in the development of the NFFP. This resulted in two studies being undertaken, one presented in this report and the other in a companion report on Southern and Eastern Africa.

2.3 The gap analysis process

2.3.1 Defining the countries for consideration

The purpose of this study was to provide a baseline of comparable information on key priorities identified at national and regional levels with regard to fisheries and aquaculture in CCA and DRM, and vice versa, in Western and Central Africa and to map where actions have or are taking place to implement these priorities, and where gaps exist.

A total of 23 countries were selected to cover the Western and Central African region – 16 of these are least developed countries (LDCs), namely Benin, Burkina Faso, Central African Republic (CAR), Chad, Democratic Republic of Congo (DRC), Equatorial Guinea, Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Niger, São Tomé and Príncipe, Senegal, Sierra Leone, and Togo, while seven are not LDCs, namely Cameroon, Cape Verde, Congo, Côte D'Ivoire, Gabon, Ghana, and Nigeria (Figure 2).

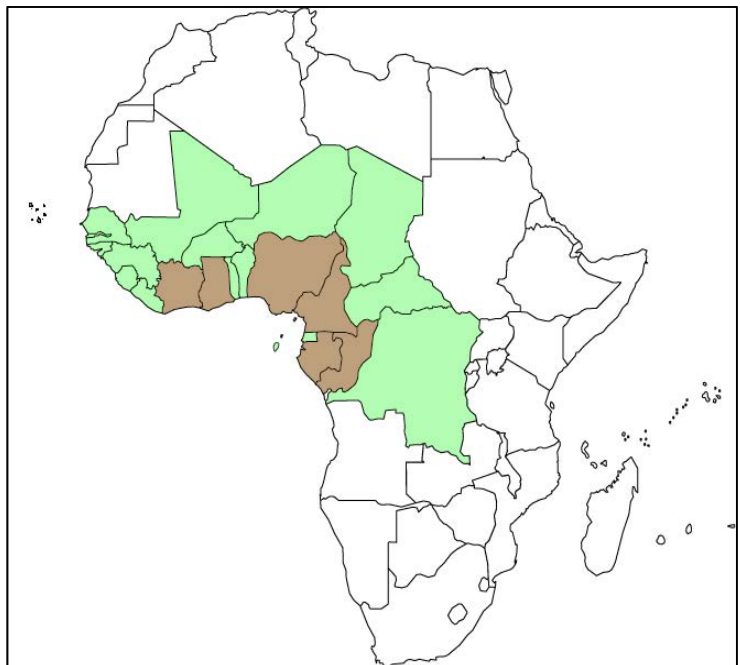


Figure 2: The 23 countries of the study (green = LDC and brown = not LDC)

²⁰ www.nepad.org/climatechangeandsustainabledevelopment

2.3.2 Mapping of regional priorities

These countries are all members of various pan-African, regional or sub-regional integration bodies with different mandates, such as a focus on economic, fishery or ecosystem issues. These inter-governmental bodies facilitate the negotiation of African, regional or sub-regional instruments and they often also coordinate projects or programmes to support the implementation of these frameworks at the national level. To map the regional priorities in respect to fisheries and aquaculture and CCA and DRM as defined through the policies, strategies and frameworks of these organizations, the following steps were taken:

- The first step was to identify the relevant bodies under the categories of (i) pan-African; (ii) RECs; (iii) shared water bodies [including LMEs, river basin organizations (RBOs) and lake basin organizations (LBOs)]; and (iv) regional fisheries bodies (RFBs). These organizations were then contacted and their websites searched in order to identify policies, strategies and frameworks that are relevant for either fisheries and aquaculture or CCA and DRM (Annex 7.1)²¹.
- The second step was to review these to assess whether (i) the fisheries and aquaculture sector is identified as a priority sector within the document; (ii) if specific vulnerabilities to climate change and disasters have been identified; (iii) if vulnerable groups and in particular women have been identified; and (iv) if specific actions have been proposed to address the vulnerabilities (Annex 7.2 and Chapter 3).

2.3.3 Mapping of national priorities

Six documents were identified and used to assess whether the fisheries and aquaculture sector is identified as a priority sector for a country; whether specific vulnerabilities to climate change and disasters have been identified, whether vulnerable groups, and in particular women, have been identified, and whether specific actions have been proposed to address the vulnerabilities. They were selected to provide comparable and available information about national development planning in general, in relation to the United Nations, the African Union and NEPAD, and in respect to CCA and DRM. The six documents were:

- Poverty Reduction Strategy Papers (PRSP) are broad national planning tools, required from countries seeking debt relief and development assistance, in order to demonstrate an inclusive and comprehensive process of national development planning that will contribute to the achievement of the Millennium Development Goals (MDGs).
- The United Nations Development Action Frameworks (UNDAFs) provide an overview of the actions, strategies and roles of the different UN agencies in response to the national development priorities.
- The Comprehensive Africa Agriculture Development Programme (CAADP²²) country compacts are signed agreements setting out the country situation and identifying priorities for investments within the framework of achieving the first MDG: to eliminate hunger and extreme poverty through growth in the agricultural sector.
- The National Adaptation Programmes of Action (NAPAs)²³ are a tool specifically for LDCs to analyse their vulnerability to climate change and identify specific measures to reduce these vulnerabilities.
- The National Communications²⁴ are country level reports on progress with implementation of the Conference of the Parties (COP) to the UNFCCC process on climate change and they are required by all non-LDCs and may be submitted by LDCs.

²¹ The study was undertaken in late 2012, therefore documents made public after this date have not been included.

²² www.nepad-caadp.net/

²³ http://unfccc.int/national_reports/napa/items/2719.php

²⁴ http://unfccc.int/national_reports/non-annex_i_natcom/items/2716.php

- The Review of Current and Planned Adaptation Action (2011)²⁵ was undertaken to provide a baseline understanding of who is doing what in the area of adaptation to disasters and climate change. The review summarizes country-level priority interests and adaptation needs, government efforts to support adaptation through policy and planning, the level of international support for adaptation efforts, and notes potential gaps in adaptation efforts at country and regional levels.

Each document was searched for relevant words such as: fish; aquaculture; mariculture; ocean; sea; coast; river; lake; marine; flood; tsunami; cyclone; gender; and women in the context of vulnerabilities, issues and/or priorities in relation to fisheries and aquaculture. When results were found they were recorded in the “first stage mapping tables”, ensuring that adequate information was recorded to understand the problem or priority. Relevant activities and projects, including partners and duration, were also recorded. This information was compiled for each of the 23 countries prior to being analysed by different criteria to provide summary tables of the identified priorities (Annex 7.3 and Chapter 4).

2.3.4 Mapping of national and regional interventions and actions

In order to assess whether actions have taken place, are taking place, or are planned to improve the resilience of individuals and communities to climate change impacts and disasters, a mapping of past, existing and emerging initiatives and programmes on CCA and DRM in relation to fisheries and aquaculture was undertaken. Three different searches were undertaken to gather information and details about the interventions, including the main focus, key activities, players and timelines:

- **Survey** – an extensive list of stakeholders was established from documents, web searches, workshop reports and personal contacts (Annex 7.4). A survey questionnaire was designed (Annex 7.5) and widely distributed to this list of stakeholders in French and English. Follow-up by email and telephone was undertaken when further information was required.
- **Document review** – information was extracted from documents and reports (Annex 7.6).
- **Website search** – the websites of countries and organizations – including all RECs, RFBs, shared water body organizations, donors and agencies – were then searched.

The information was compiled into two tables, one for national initiatives and one for regional initiatives (Annexes 7.7 and 7.8), and analysed from the regional and national perspectives (Chapters 3 and 4).

2.3.5 Review of experts’ and stakeholders’ opinions

In addition to information being extracted from documents and reports to inform the mapping of the interventions that have taken place, or are taking place (see list of documents in Annex 7.6), these documents were also reviewed to extract expert and stakeholder recommendations pertaining to gaps and required interventions in respect to fisheries and aquaculture and CCA and DRM. The findings are compiled in Chapter 5.3.

2.3.6 Regional consultative workshop

The analysis produced from the steps above, was presented and discussed with key stakeholders in a regional workshop in Accra, Ghana which took place from 1 to 2 November 2012²⁶. The workshop covered climate change, disasters and crises in the fisheries and aquaculture sector in West and Central Africa. It was attended by 45 participants representing 16 countries and a range of organizations; 34 of the participants were male and 11 were female. Prior to the workshop, participants were provided with copies of the analysis and its initial findings and were able to provide comments and additions to update the mapping during the course of the workshop. In addition, the overall recommendations of the

²⁵ Preventionweb: www.preventionweb.net/english/hyogo/national/list/?pid:23&pih:2

²⁶ FAO. 2013. Report of the FAO/NEPAD workshop on climate change, disasters and crises in the fisheries and aquaculture sector in Africa.

workshop are summarized in Chapter 4 and incorporated into the prioritization of activities that is presented in Chapter 5.

2.3.7 Gap analysis and prioritization

As is described above, gaps and recommendations were identified from three sources. Firstly, a comparison of the priorities identified in the regional and national frameworks and the implementation actions in place to address these; secondly gaps identified by experts and stakeholders through a literature review; and thirdly gaps and recommendations captured during the workshop (Chapter 5). These were then organized by focus area, providing a summary of the overall gaps and recommendations for use by a range of stakeholders. Chapter 5 takes the findings of the gap analysis and then relates these specifically to criteria for the fulfilment of NEPAD/FAO priorities in relation to NFFP Component C.

2.3.8 Limitations on methodology

Owing to the practical limitations of this study, the national fisheries and aquaculture policies were not reviewed to assess whether CCA and DRM were incorporated and prioritized. This would, however, be a useful addition to the database of information that has been compiled (note, only summaries are included in this report) and extend the overall scope and value of the study. It is also noted that the choice of the “Review of Current and Planned Adaptation Action” (2011) as the main source for mapping DRM priorities at the national level proved to be less broad than expected. Consideration was given to mapping the Hyogo framework progress reports (2009–2011) and the National Report in preparation for the World Conference on Disaster Reduction (WCDR, 2004), but only 10 and 11 countries respectively (out of 23) made these documents available and the information contained in them yielded results of limited value to this study. As a result, they were not included. Finally, it is noted that the majority of the so-called “regional strategies and policies”, mapped and discussed in Chapter 3.1 and Annex 7.1, were strictly speaking action plans or programmes rather than more general expressions of priorities.

3. Overview of regional level prioritization and implementation

Following the process described in 2.3.2, relevant bodies under the categories of (i) pan-African (ii) RECs (iii) shared water bodies and RFBs were identified and policies, strategies and frameworks relevant for either fisheries and aquaculture or CCA and DRM were identified (Annex 7.1). The purpose of this was to identify priorities that have been set for CCA and DRM within fisheries and aquaculture policy, strategy and frameworks, or vice versa. In summary:

- Four pan-African frameworks were identified, all of which have been formulated in the last ten years, two under the auspices of the AU and two under NEPAD. Two are focused on fisheries and aquaculture (the record of African Ministers at CAMFA and an action plan for fisheries and aquaculture), one is for disaster reduction (the AU strategy for DRR) and one is environmental (the NEPAD Environmental Action Plan).
- Of the five regional economic communities of this sub-region (the full list can be read in Annex 7.1.2) the only relevant frameworks identified were those of ECOWAS. These were the Regional Agricultural Policy (ECOWAP), the DRR Programme of Action (based on the DRR policy), the ECOWAS Environmental Policy and the Regional Partnership Compact for the implementation of the ECOWAP CAADP.
- For shared water bodies, two LME associated frameworks were identified, namely the Canary Current Large Marine Ecosystem (CCLME) Project Document and the Guinea Current Large Marine Ecosystem (GCLME) Strategic Action Programme (SAP). One LBO framework was identified – the SAP of the Lake Chad Basin Commission (LCBC).
- Six RFBs are relevant to this sub-region; each of these has a Convention or Agreement document that sets out the organization's broad mandate. These were all assessed, but because there were no specific references to climate change or disasters they were not included. Two of the RFBs had relevant documents, namely the Strategic Implementation Programme of the Fishery Committee of West and Central Gulf of Guinea (FCWC) and the Strategic Action Plan for Regional Fisheries Committee for the Gulf of Guinea (COREP).

This resulted in 13 frameworks being considered in the assessment of priorities. Of these, four were focused on fisheries and aquaculture, two on disasters, five more broadly on the environment, natural resources or the wider water sector and two on the agricultural sector.

3.1 Overview of trends in African, regional and sub-regional policies, strategies and frameworks

The second step was to review these frameworks to assess whether:

- 1) the fisheries and aquaculture sector is identified as a priority sector within the document;
- 2) specific vulnerabilities to climate change and disasters have been identified in the fisheries and aquaculture sectors;
- 3) vulnerable groups and in particular women have been identified for these sectors;
- 4) specific actions have been proposed to address the vulnerabilities, again in the fisheries and aquaculture sectors.

The assessment is not intended to be a comparison, but rather to provide an overview of the level of consideration of CCA and DRM in fisheries and aquaculture, and vice versa, in these frameworks. The results are presented in Annex 7.2 and are summarized below.

Importance (or potential) of sector noted

In total, 10 out of the 13 documents acknowledged the importance of the sector. Those that did not were the African Regional Strategy for DRR (2004), the ECOWAP CAADP Compact (2010) and the ECOWAS DRR Programme of Action (2010–2014). Coverage of this criterion was largely referenced in relation to broader benefits associated with fisheries and aquaculture, such as the contribution to livelihoods and food security – especially in rural communities – and in the importance of the continued growth and contribution of this sector to GDP in many countries.

Specific vulnerabilities identified (of relevance to the sector)

The ECOWAS commission has a Programme of Action (2010–2014) for DRR. The Programme is based on the ECOWAS DRR policy of 2006. Both were developed as a result of the vulnerability of the member states to natural disasters. However, the DRR policy and the Programme of Action mention the vulnerability of coastal areas and communities only very briefly, without identifying any activities specific to the fisheries sector.

The ECOWAS Environmental Policy (2008) lists the degradation of coastal and marine ecosystems as an area of concern and specifies the threats to these regions. Climate change-related vulnerabilities that pertain to fisheries are identified as a rise in water levels in deltas, increased salinization and modification of coastal vegetation and fish populations.

The FCWC 2011–2020 Strategic Implementation Programme summarizes the core issues facing fisheries in its area. These include a lack of specific climate data to feed into fisheries management plans and a lack of understanding and appreciation of the impacts of climate change on fisheries by local communities, fisheries administrators and policy makers. It also notes a lack of capacity by countries to adapt to the many challenges that climate change may bring to the region and a specific lack of preparedness within fisheries management and research.

The GCLME SAP notes the uncertainty around the potential impacts that climate change may have on the fisheries system. It acknowledges that many of the countries of the GCLME sub-region are LDCs and that they are particularly vulnerable as a result of their fragile ecosystems, which are already threatened by other environmental issues. The SAP states that the GCLME will have a significant role to play in global ocean and climate processes and is an important site for the early detection of global climate change (for example by tracking and measuring environmental events such as ENSO, flooding, algal blooms, and intrusions by the Benguela and Canary current). Natural disasters, such as floods and droughts, have caused major disruptions in the economies of many West and Central African countries and continue to increase the vulnerability of the GCLME region.

Vulnerable groups identified (including women)

None of the documents identified particularly vulnerable groups, except that they reaffirmed the particularly vulnerable status of rural fishing communities, mainly as a result of their exposure to natural disasters and extreme weather events and their lack of alternative livelihoods.

The ECOWAS Environmental Policy (2008) emphasizes the importance of environmental systems in supporting the livelihoods of rural communities that make up 80 percent of the population of the ECOWAS region. Rural communities are vulnerable to climate variability and the environmental policy has a role to play in protecting them from climate change through sustainable development. The inability of fishing communities to adapt to the negative impacts of climate change is cause for concern because the region is highly vulnerable to these effects.

Specific actions proposed to address the vulnerabilities

The activities proposed include region-wide policy level interventions as identified by the ECOWAS DRR Programme of Action, which has a number of strategic goals, including the establishment of viable National Platforms (these are inter-ministerial committees that include civil society and other key stakeholders in the respective member state); mainstreaming DRR into development planning especially through PRSPs; development of the ECOWAS ICC; and the establishment of effective DRR structures downstream within member states. This Programme of Action is not sector specific and focuses on mainstreaming DRR throughout the region. It does not identify priority areas specific to fisheries, but rather deals with strengthening resilience across the whole region to safeguard communities against natural disasters. The ECOWAS Environmental Policy lists specific actions for addressing vulnerabilities, including improving knowledge of the fishers, promoting an ecosystem-based approach and sustainable management of coastal, inland and marine ecosystems.

The CCLME Project Document (which was based on a Transboundary Diagnostic Analysis, or TDA) stipulates plans for more climate related and fishery research (e.g. through surveys using the R/V *Dr Fridtjof Nansen*). The Project Document also states that the project will contribute to adaptation to climate change by creating synergies with the UNDP/UNESCO-IOC Regional Climate Adaptation Project for West Africa (ACCC). Furthermore, a dedicated working group for climate change is envisaged and would operate under Component 1 (Multi-country process and frameworks for understanding and addressing priority transboundary concerns) in conjunction with other thematic working groups. Finally, the CCLME Project Document states that other African LME programmes will also be encouraged to participate in, and contribute to, this process (GCLME, BCLME and ASCLME).

The GCLME SAP lays out several interventions that aim to support adaptation to climate change and reduce uncertainty. These include analysing historic data to develop baseline information and developing links with other players in the region [e.g. the Climate Variability and Predictability (CLIVAR) Project²⁷ of the World Climate Research Programme, which aims to compare climate and fisheries data in order to understand the links between climate, weather and fish.]

The CAMFA record recommended that member states, RECs and RFBs mainstream climate change in fisheries policies, development and management programmes.

3.2 Overview of results of mapping African, regional and sub-regionally coordinated initiatives

The methodology for the mapping process is outlined in Chapter 2.3.4. It is important to note that when selecting projects, initiatives and activities, the two main factors for including initiatives in this mapping were: 1) the relevance of the project/initiative/activity to CCA and/or DRM and to fisheries/aquaculture; and 2) the potential for up-scaling or incorporating CCA/DRM or fisheries/aquaculture. Due to their potential for building on past work on CCA and DRM, or on fisheries and aquaculture, past projects were also included.

The mapping showed that there were two broad categories of regional projects. There are sub-regional projects that operate in the Western and Central African region and regional projects that operate continentally, or across the whole sub-Saharan region (and occasionally at a global level). Generally speaking, both these kinds of projects have a broad regional mission or aim, but carry out country-specific actions. That is to say that a regional project can operate in a Western and Central African country, but is not considered as a sub-regional project. The results of the mapping are summarized in the table below; 55 projects were identified in total and 31 of these were CCA and DRM projects that incorporate elements of fisheries and aquaculture. The full list of projects is presented in Annex 7.7.

Table 1 – Summary of the number of regional and sub-regional projects and focus areas

	No. of projects	No. of current projects	CCA/DRM projects directed at fisheries/aquaculture
Regional (continental)	21	15	11
Sub-regional (Western and Central African)	34	21	20
Total	55	36	31

²⁷ www.clivar.org/

4. Overview of national level prioritization and implementation

In order to examine how fisheries and aquaculture are prioritized in different countries, primarily in relation to CCA and DRM, the following national documents were mapped using four criteria to find information on relevant priorities: Poverty Reduction Strategy Papers (PRSP); the United Nations Development Action Frameworks (UNDAF); the Comprehensive Africa Agriculture Development Programme (CAADP); the National Adaptation Programmes of Action (NAPAs); the National Communications; and the Review of Current and Planned Adaptation Action (2011). A summary of the results per country is presented in Annex 7.3, and the findings are set out below.

Importantly, the summaries and analysis in this section are based on documents that were available; for some countries a number of documents were not available. For example, few of the relevant national priorities documents were available for Equatorial Guinea and so no conclusions can be drawn about that country at this stage. Furthermore, for quite a number of countries the national CAADP compacts were either not available or they were unsigned, or both.

4.1 Comparison of national frameworks with respect to fisheries/aquaculture and CCA/ DRM

Table 2 summarizes the overall inclusion of criteria in the documents reviewed. For example a total of 16 countries out of 23 had NAPAs and of these 16, the importance of the sector was acknowledged in 11 NAPAs (69 percent of the NAPAs available). Overall, the NAPAs and National Communications – both climate change frameworks – incorporated fisheries and aquaculture concerns the most. For instance, relevant vulnerabilities were identified in 81 percent of these documents, vulnerable groups were identified in 63 percent and adaptation priorities were offered in 81 percent of the NAPAs, and slightly fewer of the National Communications. The NAPAs and National Communications were followed by the PRSPs, which often discussed the vulnerabilities of the sector more generally and also identified more general actions. The Review 2011 documents generally summarized the NAPAs and National Communications. Least specific were the UNDAFs and national CAADP compacts, which quite often did not mention the sector at all, or only mentioned some quite general actions (e.g. promoting sustainable management of fisheries). It should be noted that the gaps identified later in the study (Chapter 5) relate to priorities for which there is no project or initiative in place to address that priority (if no priority is identified, no gap will be identified). The low priority given by the UNDAFs and the CAADPs to fisheries and aquaculture in general, and identifying and addressing vulnerabilities of fishing communities and individuals in particular, is also considered a key gap and finding of this study.

Table 2 - Summary of the inclusion of the criteria in the 118 documents reviewed

Criteria	NAPA Total 16 documents	NC Total 21 documents	PRSP Total 22 documents	UNDAF Total 22 documents	CAADP Total 14 documents	Review 2011 Total 23 documents
Importance of sector noted	In 11 documents 69%	In 13 documents 62%	In 13 documents 59%	In 0 documents 0%	In 2 documents 14%	In 3 documents 13%
Specific vulnerabilities identified (of relevance to the sector)	In 13 documents 81%	In 15 documents 71%	In 12 documents 55%	In 2 documents 9%	In 0 documents 0%	In 21 documents 91%
Women/vulnerable groups identified	In 10 documents 63%	In 3 documents 14%	In 4 documents 18%	In 0 documents 0%	In 1 document 7%	In 3 documents 13%
Specific actions proposed to address the vulnerabilities	In 13 documents 81%	In 13 documents 62%	In 12 documents 55%	In 5 documents 23%	In 8 documents 57%	In 6 documents 26%

Shading: darker shading indicates a greater inclusion of the criteria in the documents reviewed.

4.2 Overview and trends of national priorities across all frameworks

Importance (or potential) of sector noted

Out of all 23 countries included in the gap analysis, 19 noted the importance and/or the potential of their fisheries and aquaculture sector. Most commonly, the importance of the sector was reflected by its contribution to GDP, export revenues, employment (including rural livelihoods) and food security/nutrition (animal protein), etc. Some countries, e.g. the Republic of Congo, DRC and Togo, noted that the sector was currently underexploited but had significant potential in one or more of the areas above, while other countries, e.g. Gabon and Niger, noted the relative importance of the sector but also suggested that it had potential to play a more significant role.

Specific vulnerabilities identified (of relevance to the sector)

Apart from Equatorial Guinea, for which there was little information available, only Burkina Faso did not mention specific vulnerabilities relevant to the sector. The vulnerabilities most commonly noted with specific regard to climate change and disasters were floods; heavy rains; increased variability in precipitation; storms; droughts; sea level rise (and saltwater intrusion); coastal erosion; water temperature increase; coral bleaching; changes in upwelling along the Gulf of Guinea; increase in frequency of fogs, cyclones and typhoons; increased wave energy; etc.

These were thought to potentially cause degradation or destruction of spawning areas and habitats; migration of fish; changes in the ecosystem (e.g. mangroves); reduction of biodiversity; reduction of productivity levels; changes to species life cycles; damage to/loss of gear and infrastructure; siltation of rivers, lakes and ponds; proliferation of invasive water plants; etc.

Other noted vulnerabilities were related to significant post-harvest losses; overexploitation of fisheries resources; overexploitation of mangrove forests and deforestation in general; pollution (e.g. from oil exploration, pesticide run-off, waste); use of destructive gear (e.g. dynamite and poison/chemicals); absence or lack of implementation/enforcement of a national policy or legal framework for the sector; illegal and unreported fishing; unsuitable fish farming; introduction of exotic species; uncontrolled urbanisation of the coastline; etc.

When added together, these vulnerabilities and threatened impacts were predicted to result in loss of livelihoods; loss of income; greater risks involved in fishing at sea; food insecurity; displacement/migration of people to and from fishing areas; conflicts (e.g. between different groups of fishers); dependency on imports of fish products; etc.

Vulnerable groups identified (including women)

Thirteen countries (including 11 LDCs) identified vulnerable groups relevant to the sector. However, only one of the landlocked countries – Burkina Faso – identified fishing communities as particularly vulnerable. Fishing communities/households were noted as being among the most vulnerable to climate change owing to their dependence on a resource that is itself vulnerable to climate variability and change. In addition, these groups were identified as vulnerable because of their general state of poverty; geographic remoteness; lack of alternative livelihoods; lack of support systems (health care, credit and loan facilities, education, etc.) and food insecurity.

In some cases, there was no specific mention of fishing communities being the most vulnerable to climate change, but fishers or other related groups were identified as being generally more vulnerable as a result of their high levels of poverty or their precarious situation. For example, Cape Verde simply mentioned that farmers and fishworkers were more likely to be poor than those working in other sectors. In the DRC documents, fishing communities were not mentioned specifically, but it was noted that women have become the head of many households owing to their spouses having disappeared or died in the civil war, or from HIV/AIDS. Consequently, in many instances, women are now the main

providers. For Sierra Leone, women and children were noted as most vulnerable owing to their low literacy levels and the remoteness of the rural areas, including the coast.

Of the countries that did not identify fishing communities as particularly vulnerable groups, several mentioned the sector as particularly vulnerable, which suggests that those who are dependent on the sector would also be particularly vulnerable.

Specific actions proposed to address the vulnerabilities

With the exception of Equatorial Guinea, for which there was little information available, only Chad did not propose any specific actions, although it did note the importance of the sector and its vulnerabilities.

Actions proposed by the other countries, and which relate specifically to CCA and DRM, included protection of the coast (including mariculture infrastructure) against sea level rise and coastal erosion; coherent coastal zone planning and management; establishment/improvement of meteorological monitoring and forecasting; establishment of early warning systems (for oil spills, floods, droughts, etc.). Also proposed were actions that might be described as control actions, e.g. construction of dykes to protect against flooding; awareness-raising among the population and vulnerable groups; resettlement of vulnerable populations; development of new home construction techniques which are less vulnerable to flooding; reduction of siltation through, for example, reforestation and soil preservation techniques; promotion of wood energy saving techniques (e.g. using solar power for fish smoking) to reduce pressure on forests (including mangroves); etc.

Other supporting actions generally included promotion and development of aquaculture; stocking of rivers, lakes and ponds; ensuring sustainable management of fisheries resources (including combating illegal, irresponsible and overfishing; reducing post-harvest losses; establishing effective MCS; strengthening the policy/legal/institutional framework; strengthening research capacity); reduction of pollution; reforestation (including of mangroves); establishment of protected/closed areas (including around mangroves); diversification of livelihoods (e.g. through training, micro-credit, promotion of integrated approaches such as community-based fish and poultry farming); development of processing and marketing infrastructure; etc.

4.3 Overview of results of mapping national initiatives and actions

The results of the stakeholder mapping survey were quite general. A total of 72 responses were received, but some were not relevant and many overlapped. Commonly, respondents highlighted the role of government departments of agriculture or fisheries in assisting the fisheries sector to adapt. However, it was evident from the responses that very few projects specifically focused on CCA and/or DRM within the fisheries sector. For example, the project “Increasing resilience and adaptation to impacts of climate change in Guinea’s vulnerable coastal zone”, does not specifically deal with adaptation in the fisheries sector, but assists coastal communities to increase their capacity to plan for, and respond to, climate change. Many other projects focus on information sharing and sensitizing communities to the potential impacts of climate change. For example, the Kanuri Development Association based on the Lake Chad fisheries is using local dialects to teach people about the impacts of climate change and thereby improve adaptation strategies and strengthen resilience to climate change. All projects mentioned in responses are noted in the project mapping table (Annex 7.8).

The methodology for the mapping process is outlined in Chapter 2.3.3. However, as with the regional initiatives, it is important to note that when selecting projects, initiatives and activities, the two main factors for including initiatives in this mapping were (i) the relevance of the project/initiative/activity to CCA and/or DRM and to fisheries/aquaculture; and (ii) the potential for up-scaling or incorporating CCA/DRM or fisheries/aquaculture. Owing to their potential to build on earlier work on CCA and DRM, or on fisheries and aquaculture, past projects were also included.

In total, 46 projects were identified. Twenty two of these were CCA or DRM projects that directly incorporated aspects of fisheries or aquaculture.

Table 3 – Summary of the number of national initiatives and actions

Country	No. of projects	No. of current projects	CCA/DRM projects directed at fisheries/aquaculture
Benin	5	3	4
Burkina Faso	3	2	1
Cameroon	1	0	1
Cape Verde	3	0	1
CAR	0	0	0
Chad	0	0	0
Congo	0	0	0
Côte D'Ivoire	0	0	0
DRC	0	0	0
Equatorial Guinea	0	0	0
Gabon	0	0	0
Gambia	1	1	0
Ghana	4	3	1
Guinea	0	0	0
Guinea Bissau	2	1	2
Liberia	2	1	2
Mali	5	2	0
Niger	5	2	1
Nigeria	7	5	3
São Tomé and Príncipe	3	2	3
Senegal	3	2	3
Sierra Leone	1	1	0
Togo	1	0	0
TOTAL:	46	25	22

5. Gap analysis

5.1 Gaps in regional priorities compared to implementation

To assess the gaps between what needs to be done (as identified in the reviewed regional frameworks) and what is being done (or what has been done, or what is intended) to address climate change and disaster risk in fisheries and aquaculture at a regional level, the following methodology was used. Firstly, the overview of the level of consideration²⁸ of CCA and DRM in fisheries and aquaculture, and vice versa, in regional strategies and frameworks (presented in Section 3.1), was used to identify particular vulnerabilities and priorities. Secondly, the findings were compared against the subregional and regional project activities listed in Annex 7.7. The purpose of this exercise was to identify broader gaps rather than more detailed discrepancies. Some of the main limitations of this approach included the varying amounts of information available for different projects and the occasionally arbitrary judgements made as to whether a project activity really could be deemed as corresponding to a vulnerability/priority action or not; project activities rarely matched vulnerabilities and priority actions perfectly. Taking the above limitations into account, it is noted that the primary gap identified appeared to be to:

- Support the inclusion of fisheries/aquaculture in existing CCA/DRM policy and strategy processes and vice versa, and specifically ensure the identification of actions to address vulnerabilities, as appropriate. Applicable to: the ECOWAS Programme of Action (2010–2014) for DRR, the African Regional Strategy for DRR, the CAMFA and the related Comprehensive African Fisheries Reform Policy and Strategy.

However, over and above this gap, a number of opportunities were also identified, namely:

- Strengthen regional research so as to provide improved understanding of climate change impacts and knowledge to reduce uncertainty, e.g. by analysing historic data to develop baseline information and through surveys using the R/V *Dr Fridtjof Nansen*. Applicable to: the CCLME countries.
- Support the implementation of the FCWC 2011–2020 Strategic Implementation Programme with regard to its climate change components. Applicable to: the FCWC region.
- Strengthen partnerships between organizations to share practical lessons on CCA and DRM and improve strategic planning to increase resilience. Applicable to: cooperation between the LME projects and programmes in the sub-region, i.e. GCLME and CCLME, and also other African LMEs e.g. BCLME and ASCLME.
- Strengthen interventions underway in RFBs and shared water bodies to relate more specifically to CCA/DRM, with the aim of mainstreaming and addressing vulnerabilities. Applicable to: LCBC (specifically through the Prodebalet project).

5.2 Gaps in national priorities compared to implementation

To assess the gaps between what needs to be done (as identified in the reviewed national frameworks) and what is being done (or what has been done, or what is intended) to address climate change and disaster risk in fisheries and aquaculture, a similar methodology to the one described in 5.1 was used. For each country, expressed priority actions (as per Annex 7.3) were compared against project activities (both national and relevant regional projects) described in Annexes 7.7–7.8. It should be noted that the tables in the annexes and the text below are based on a systematic approach to the analysis of the documents. As such, both tables and text include all priorities found, even if their relevance is questionable. Gaps were mainly identified when expressed priority actions did not have any obvious

²⁸ Using the following criteria: importance of sector noted; specific vulnerabilities identified (of relevance to sector); vulnerable groups identified (including women); and specific actions proposed to address the vulnerabilities.

corresponding project activities at the national level. However, there were also cases of project activities taking place despite there being no (or no directly corresponding) expressed priority actions. As in 5.1, the purpose of this exercise was to identify broad gaps (e.g. the need for integrated coastal zone management, co-management, early warning systems/safety at sea, etc.) rather than more detailed discrepancies. And again, as in 5.1, some of the main limitations to this approach included the varying amounts of information available for different projects and the occasionally arbitrary judgements made as to whether a project activity really could be deemed as corresponding to a priority action or not; priority actions and project activities were seldom a clear match.

Taking the above limitations into account, the primary gap identified appeared to be support for aquaculture development as a means to increase the resilience of communities and individuals to risks in general, by diversifying food sources and livelihood options and supporting adaptation actions to make aquaculture more resilient. Adaptation actions include capacity building and the provision of infrastructure and inputs (e.g. provision of fingerlings, etc.). This was identified as a gap by 10 of the countries, including Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Republic of Congo, Ghana, Mali, Senegal and Sierra Leone. Each of these countries identified this as a priority intervention required in one or more of the policy documents reviewed, but no direct project activity was identified that was addressing this need. For two countries, namely Guinea and Togo, there appeared to be a gap relating to integrated fish farming. For example, in Guinea, prioritized adaptation actions related to aquaculture included farming of mangrove oyster; livelihood diversification away from fishing; and combining rice planting with fish farming; in Togo community-based integrated fish and poultry farming was listed.

Other recurring gaps included actions to reduce illegal and overfishing, which were identified as key problems that reduce the access of vulnerable communities to resources (especially in times of crisis) and increase the risks they are exposed to. Therefore, reducing illegal/overfishing will increase their ability to cope with climate change effects and disasters. Specific priorities noted included improved monitoring, control and surveillance (MCS) in Cameroon, Republic of Congo, DRC, Gambia and Guinea.

Promoting and strengthening alternative livelihood activities, including livelihood diversification, was identified as a priority by Cape Verde, DRC, Guinea and Mali, but no clear activity was proposed to address this and thereby increase resilience to climate change and disasters. Other countries, including Republic of Congo, DRC, Ghana, Guinea and Guinea-Bissau identified the improvement of post-harvest handling and the development of processing and marketing of products as priorities, but again there were no projects or interventions planned to address this.

Furthermore, the following appeared to constitute gaps in only a few countries: development of inland fisheries as a diversifying option and alternative for marine fishers, or as a new livelihood option (Ghana and Guinea); integrated coastal management to ensure robust planning (Cameroon and Guinea); and strengthening of fisheries legislation or policy (Cameroon and Republic of Congo).

Importantly, for some countries (Chad, Côte d'Ivoire and Equatorial Guinea) there were no clearly expressed priority actions and therefore it was not possible to identify any specific gaps. São Tomé and Príncipe only identified very specific gaps including the use of Fish Concentration Devices (FCD) and the introduction of, and training in, navigation technology²⁹.

²⁹ It is debatable whether these activities are directly related to improving resilience to climate change or disasters, but they are listed as such within the NAPA and because the methodology of the gap analysis was to identify the prioritized activities as they are provided in the frameworks they have been included.

5.3 Additional gaps identified by experts and stakeholders

In addition to the above approach, gaps were identified from recommendations made by experts and stakeholders³⁰. These recommendations were often more general than country or subregion-specific and thus they were compared against regionally expressed priorities (Section 5.1) as well as against countries' vulnerabilities and expressed priority actions (Section 5.2) only in relevant cases. This was in an effort to support the identification of priority countries and regions.

5.3.1 Actions to be taken through sub-regional/regional projects, programmes and/or bodies

- Support the inclusion of CCA/DRM or fisheries/aquaculture in existing CCA/DRM or fisheries/aquaculture projects/programmes, as appropriate. Applicable to: as mentioned in 5.1, with regard to the inclusion of CCA/DRM in existing fisheries/aquaculture projects/programmes, this could be relevant for the Strategic Partnership for Sustainable Fisheries Investment Fund (SPFIF); the Sustainable Aquaculture Research Networks in Sub-Saharan Africa (SARNISSA); the Aquaculture Working Group of PAF (AWG); or the Aquaculture Network for Africa (ANAF). With regard to inclusion of fisheries/aquaculture in existing CCA/DRM projects/programmes, this could be relevant for the Great Green Wall project (see Annex 7.7).
- Enhance collaboration between RECs, RFBs and LMEs on fisheries/aquaculture and CCA/DRM-related policy formulation and establish procedures for information sharing with other transboundary information sharing protocols, as required. Applicable to: considering the substantial geographical overlap between ECOWAS, GCLME, CCLME and FCWC, their shared concerns with regard to CCA and DRR, and – in the case of the LCBC and related RECs – general coordination of activities and information sharing could be warranted.

5.3.2 Country-specific actions

- Support the inclusion of fisheries and aquaculture in national planning processes and frameworks, taking into consideration community needs, such as in the NAPAs, National Communications, CAADP compacts, Poverty Reduction Strategy Papers (PRSPs), DRM policies and plans, UNDAFs, etc. Applicable to: primarily to UNDAFs (16 countries³¹) and CAADPs (seven countries³²), where these were identified and/or signed. Notably, whereas the UNDAF was only unidentified for one country (DRC), seven countries (Cameroon, CAR, Chad, Republic of Congo, Gabon, Guinea and São Tomé and Príncipe) had either not signed CAADPs or they were simply not available. With regard to aquaculture, there might be a need for broader inclusion, e.g. in NAPAs and National Communications. Although the promotion of aquaculture or aquaculture development are quite often listed as priority actions, the vulnerabilities of aquaculture in relation to disaster risks and climate change may need greater consideration.
- Supporting implementation of priority actions in national planning where fisheries and aquaculture are mentioned in the NAPAs of LDCs by supporting the development of project identification forms (PIFs). Applicable to: 12³³ countries identified relevant actions (for details see Annex 7.9) but these also need to be considered alongside the gaps identified in Section 4.2.

³⁰ Sources include: FAO. 2011. Report of the African Regional Consultative Meeting on Securing Sustainable Small-Scale Fisheries: bringing together responsible fisheries and social development, Maputo, Mozambique, October 2010. FAO fisheries and Aquaculture Report/FAO, No 963. Rome, FAO. 68pp.; Campbell, J. 2010. Reduced vulnerability of fishing and fish farming communities to natural disasters in Africa. 26pp.; Muir, J. Hard rains and strong tides: a review of African region fishery sector initiatives and programmes on climate change and disaster risk management. Background Paper for Outcome 3 of NFFP (GCP/RAF/463/MUL) – SIDA AFRICA Programme.; and meetings with NEPAD and FAO experts 2012.

³¹ Namely, Benin, Burkina Faso, Cameroon, CAR, Chad, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Guinea, Mali, Niger, Nigeria, Senegal and Togo.

³² Burkina Faso, Equatorial Guinea, Liberia, Mali, Niger, Nigeria and Togo – these countries all have signed CAADPs but they do not incorporate fisheries and aquaculture. Other countries have either incorporated fisheries and aquaculture or they do not have signed CAADPs.

³³ Namely, Benin, Burkina Faso, Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Niger, São Tomé and Príncipe, Senegal, Sierra Leone and Togo.

- Promoting approaches and practices such as EAF and EAA, which contribute to reducing the exposure and vulnerability of communities by developing and implementing management plans that take into account CCA and DRM needs and support implementation. Applicable to: broadly applicable but a logical start could be to begin with the countries involved in the EAF-Nansen project³⁴.
- Climate proofing of the national (CAADP) investment plans (in respect to fisheries and aquaculture) as well as providing step-by-step guidance on how to achieve this. Applicable to: countries that have identified their fisheries as underdeveloped and/or with potential: CAR, Republic of Congo, DRC, Gabon, Mali (also aquaculture potential), Niger, São Tomé and Príncipe and Togo (aquaculture); also countries that have identified aquaculture as priority, namely Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Republic of Congo, Ghana, Guinea, Mali, Nigeria, Senegal, Sierra Leone and Togo.

5.3.3 ***Actions with regard to local, national and regional CCA/DRM plans and implementation***

- Supporting local, national and regional policy linkages and two-way communication through pilot activities for the development and implementation of DRM and CCA plans in a participatory and integrated manner in selected fishing/fish farming communities and countries. Applicable to³⁵: 20³⁶ of the countries identified vulnerabilities with regard to extreme weather (floods, droughts, heavy rain, etc.) and sea level rise, but only nine³⁷ of these proposed specific priority actions aimed at addressing the vulnerabilities.
- Establish early warning systems at local, national and international levels and training for fishers in safe fishing and navigation practices. Establish a framework for safety at sea, including making safety equipment available on national and local markets. Applicable to³⁸: see bullet point one, above.
- Improve collaboration between fisheries administrations and national DRM institutes, with better provision for DRM support in disaster-prone areas, better information flow at all levels and across sectors, capacity building and involvement of fishing communities in national contingency planning. Applicable to³⁹: see bullet point one, above.
- Establish DRM committees, or link with co-management or community development committees trained in risk assessment, management and communication at different levels. Applicable to⁴⁰: see bullet point one, above.

5.3.4 ***Other relevant actions***

- Strengthen and enhance gender-based approaches in fisheries management planning through, for example strengthening the coherence between FAO and NPCA gender programmes to facilitate the appropriate implementation of the NFFP gender strategy. Applicable to: this recommendation is of an organizational nature (FAO, NEPAD, etc.).
- Promoting the dissemination of gained experiences and lessons learnt in order for them to feed into national, sub-regional and regional-level policies and strategies through, for example, the organization of best practices exchange workshops, co-prepared and organized with RECs and/or RFBs, the development of guidelines and/or other publications. Applicable to: this recommendation is of an organizational nature (FAO, NEPAD, etc.) but may be relevant for

³⁴ Relevant member countries: Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone and Togo.

³⁵ Notably, none of the gaps of Section 5.2 related to *emergency preparedness*.

³⁶ Exceptions: Burkina Faso, Côte d'Ivoire and Equatorial Guinea.

³⁷ Namely, Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Ghana, São Tomé and Príncipe, Senegal and Togo.

³⁸ Notably, none of the gaps of Section 5.2 related to *emergency preparedness*.

³⁹ Notably, none of the gaps of Section 5.2 related to *emergency preparedness*.

⁴⁰ Notably, none of the gaps of Section 5.2 related to *emergency preparedness*.

incorporation in the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa that is currently being developed within the NEPAD and AU.

- Supporting opportunities for improved policy coherence and coordination of DRM and CCA initiatives in fisheries and aquaculture at all levels including, for example, the establishment of an African Working Group on climate change and disasters in fisheries and aquaculture and the preparation of joint actions such as policy briefs on climate change, disasters and crises to inform CAMFA. Applicable to: this recommendation is of an organizational nature (FAO, NEPAD, etc.).

5.4 Workshop recommendations

The participants of the workshop⁴¹ on climate change, disasters and crises in the fisheries and aquaculture sector in West and Central Africa – held in Accra, Ghana, from 1 to 2 November 2012 – also agreed to a set of recommendations for addressing CCA and DRM in fisheries and aquaculture in Western and Central Africa. In summary their recommendations were:

- Increase access to, and share information on potential impacts of climate change and variability and disaster risks.
- Establish and/or implement early warning systems, including monitoring and documentation of their effectiveness.
- Use of integrated management approaches such as EAF and EAA with due consideration to climate change and disaster risks.
- Improve the value chain and increase product diversification to reduce post-harvest losses and improve hygiene, with a particular focus on women's role in fish processing so as to increase their resilience to changes in species availability and other changes.
- Develop and share (best) coping practices in order to increase resilience at the local level; also share local knowledge at national and regional levels.
- Improve access to microfinance and insurance schemes to allow diversification of livelihoods, more entrepreneurial approaches and insurance against the impacts of disaster.
- Increase access to, and use of, environmentally friendly technology, e.g. solar panels, energy-efficient ovens and fibreglass canoes.
- Diversify income by creating alternative livelihoods, with related capacity building. Include fisheries and aquaculture in national and CCA and DRM planning frameworks using participatory approaches and climate proof CAADP in relation to fisheries/aquaculture.
- Improve collaboration between regional organizations to improve CCA and DRM in fisheries and aquaculture, e.g. between RECs and RFBs and between RECs and lake/river basin organizations.

Of particular concern in marine fisheries in respect to CCA and DRM was the need for strengthened co-management arrangements, coastal management plans and coping with the migration of people into fishing communities. These were identified as fundamental to improving the resilience of vulnerable fishing communities to climate related change and disasters. With regard to aquaculture (improving the role of aquaculture as an adaptation activity and making the aquaculture sector more resilient to change) it was suggested that more attention needs to be given to this sector and aquaculture networks could play an important role, especially in knowledge dissemination regarding CCA and DRM. In terms of inland fisheries, strengthening of community-based organizations and collaboration with other food producing sectors on climate change adaptation and vulnerability reduction were particularly noted.

5.5 Categorization of gaps and summary of the gap analysis

The aim of this chapter was to identify and summarize gaps and recommendations from a number of different sources. Sections 5.1 and 5.2 summarized gaps at a regional and national level. Gaps were identified by a gap analysis based on the systematic approach of comparing identified priorities against

⁴¹ Report of the FAO/NEPAD workshop on climate change, disasters and crises in the fisheries and aquaculture sector in Africa, Accra, Ghana, 1–2 November 2012.

known actions and thus finding the gaps. This was based on the information in Chapters 3 and 4 and follows the extensive review of 131 national and regional level framework documents. Section 5.3 summarizes gaps/recommendations identified by experts and stakeholders through a survey (Annex 7.5), internet searches and consultations with 49 relevant organizations (Annex 7.4) and a review of 55 relevant documents and reports (Annex 7.6). Finally, Section 5.4 summarizes gaps/recommendations identified during a regional workshop held in 2012 and specifically focused on CCA and DRM for this African sub-region.

Thus, so far in this chapter the gaps/recommendations have been categorized based on their source. Although it should be noted that these gaps/recommendations are not comparable in a clear-cut way, owing to their varying degree of detail and varying targets (community, national, regional and continental) a categorization of the gaps has been undertaken based on approaches to reducing the vulnerabilities and increasing resilience to climate change and disaster impacts for individuals and communities. Four categories of approaches used were:

- 1) Strengthened governance to address disasters and climate change impacts affecting fisheries and aquaculture;
- 2) Addressing and reducing underlying risks through prevention and adaptation measures;
- 3) Managing effective response and improving preparedness for disasters and climate change; and
- 4) Improved early warning systems and availability of information.

In the sections below the gaps identified in 5.1 to 5.4 have been re-grouped into these categories and are listed below:

5.5.1 *Strengthened governance to address disasters and climate change impacts affecting fisheries and aquaculture*

1. Enhance collaboration⁴² between RECs, RFBs and LMEs on fisheries/aquaculture and CCA/DRM-related policy formulation and establish procedures for information sharing with other transboundary information sharing protocols, as required. Applicable to: considering the substantial geographical overlap between ECOWAS, GCLME, CCLME and FCWC, their shared concerns with regard to CCA and DRR, and the LCBC and related RECs, it appears that general coordination of activities and information sharing could be warranted.
2. Climate proofing of the national (CAADP) investment plans (in respect to fisheries and aquaculture) and providing step-by-step guidance on how to achieve this. Applicable to: countries that have identified their fisheries as underdeveloped and/or with potential: CAR, Republic of Congo, DRC, Gabon, Mali (also aquaculture potential), Niger, São Tomé and Príncipe and Togo (aquaculture); also countries that have identified aquaculture as priority, namely Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Republic of Congo, Ghana, Guinea, Mali, Nigeria, Senegal, Sierra Leone and Togo.
3. Strengthening of fisheries legislation/policy. Applicable to: Cameroon and Republic of Congo.
4. Support for the inclusion of fisheries and aquaculture in national planning processes⁴³ and frameworks, taking into consideration community needs, such as in the NAPAs, National Communications, CAADP compacts, Poverty Reduction Strategy Papers (PRSPs), DRM policies and plans, UNDAFs, etc. Applicable to: this is primarily applicable to UNDAFs (16 countries⁴⁴) and CAADPs (seven countries⁴⁵), where these were identified and/or signed. Notably, the UNDAF was

⁴² The workshop recommended that collaboration between regional organizations to improve CCA and DRM in fisheries and aquaculture, e.g. between RECs and RFBs, and between RECs and lake/river basin organizations, should be improved.

⁴³ The workshop recommended that fisheries and aquaculture should be included in national and CCA and DRM planning frameworks.

⁴⁴ Namely, Benin, Burkina Faso, Cameroon, CAR, Chad, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Guinea, Mali, Niger, Nigeria, Senegal and Togo.

⁴⁵ Burkina Faso, Equatorial Guinea, Liberia, Mali, Niger, Nigeria and Togo which are the countries with signed CAADPs but no inclusion of CCA/DRM, nine others have CAADPs and already include fisheries/aquaculture.

unidentified for one country (DRC) and seven countries (Cameroon, CAR, Chad, Republic of Congo, Gabon, Guinea and São Tomé and Príncipe) had either not signed CAADPs or they were simply not available. With regard to aquaculture, there might be a need for broader inclusion, e.g. in NAPAs and National Communications. Although the promotion of aquaculture or aquaculture development are quite often listed as priority actions, the vulnerabilities of aquaculture in relation to disaster risks and climate change may need greater consideration.

5. Mainstream gender in fisheries management. Applicable to: broadly applicable.
6. Promoting the dissemination of gained experiences and lessons learnt in order for them to feed into national, sub-regional and regional level policies and strategies through, for example, the organization of best practices exchange workshops, co-prepared and organized with RECs and/or RFBs and the development of guidelines and/or other publications. Applicable to: this recommendation is of an organizational nature (FAO, NEPAD, etc.) but may be relevant for inclusion in the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa that is currently being developed within the NEPAD and AU.
7. Supporting opportunities for improved policy coherence and coordination of DRM and CCA initiatives in fisheries and aquaculture at all levels including, for example, the establishment of an African Working Group on climate change and disasters in fisheries and aquaculture; the preparation of joint actions such as policy briefs on climate change, disasters and crises to inform CAMFA. Applicable to: this recommendation is of an organizational nature (FAO, NEPAD, etc.).
8. Support the inclusion of fisheries/aquaculture in existing CCA/DRM policy and strategy processes and vice versa, and specifically ensure the identification of actions to address vulnerabilities, as appropriate. Applicable to: the ECOWAS Programme of Action (2010–2014) for DRR, the African Regional Strategy for DRR, and the CAMFA and related Comprehensive African Fisheries Reform Policy and Strategy.
9. Support the implementation of the FCWC 2011–2020 Strategic Implementation Programme with regard to its climate change components. Applicable to: the FCWC region.
10. Strengthen interventions underway in RFBs and shared water bodies to relate more specifically to CCA/DRM, with the aim of mainstreaming and addressing vulnerabilities. Applicable to: LCBC (Prodebalt project).

5.5.2 Addressing and reducing underlying risks through prevention and adaptation measures⁴⁶

1. At a regional/programme level, support for aquaculture development and related CCA and DRM, could be given, in recognition of the role of aquaculture as an adaptation measure (because it increases the resilience of communities by diversifying food sources) and also to support CCA and DRM measures in the aquaculture sector. Applicable to: such support could be provided in collaboration with the Sustainable Aquaculture Research Networks in Sub-Saharan Africa (SARNISSA), the Aquaculture Working Group of PAF (AWG) or the Aquaculture Network for Africa (ANAF). This could facilitate the further implementation of the draft FAO Fisheries and Aquaculture Department strategy for DRM and CCA in Africa.⁴⁷
2. At a national level, support for aquaculture development, including capacity building, infrastructure and inputs (e.g. provision of fingerlings, etc.) to increase resilience in communities by providing an alternative to capture fisheries. Applicable to: for ten of the countries this appeared to be a gap, namely Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Republic of Congo, Ghana, Mali, Senegal and Sierra Leone. For two countries, Guinea and Togo, there appeared to be a gap relating to integrated fish farming.

⁴⁶ The workshop noted that of particular concern in *marine fisheries* were co-management arrangements and coping with the migration of people into fishing community areas.

⁴⁷ The workshop recommended that with regard to *aquaculture*, more attention needs to be given to the sector and the aquaculture networks could be involved, especially in knowledge dissemination regarding CCA and DRM.

3. Improved post-harvest handling and the development of processing and marketing of products⁴⁸ so as to diversify the value chain and increase robustness to climate change and disaster impacts. Applicable to: Republic of Congo, DRC, Ghana, Guinea and Guinea-Bissau.
4. Development of inland fisheries⁴⁹ so as to offer alternative fish food sources and strengthen national resilience. Applicable to: Ghana and Guinea.
5. Promoting and strengthening livelihood activities, including livelihood diversification, to increase resilience to climate change and disasters⁵⁰. Applicable to: Cape Verde, DRC, Guinea and Mali.
6. Reducing illegal and overfishing, which were identified as key reasons for reducing the access of vulnerable communities to resources (especially in times of crisis) and increasing the risks that they are exposed to. Therefore, reducing illegal/overfishing will increase their ability to cope with climate change effects and disasters. Specific priorities included improved monitoring, control and surveillance. Applicable to: Cameroon, Republic of Congo, DRC, Gambia and Guinea.
7. Promoting approaches and practices such as EAF and EAA, which contribute to reducing the exposure and vulnerability of communities by developing and implementing management plans that take into account CCA and DRM needs and support implementation⁵¹. Applicable to: broadly applicable but a logical start could be to begin with the countries involved in the EAF-Nansen project⁵².
8. Support the inclusion of CCA/DRM or fisheries/aquaculture in existing CCA/DRM or fisheries/aquaculture projects/programmes, as appropriate. Applicable to: as mentioned in 5.1, with regard to inclusion of CCA/DRM in existing fisheries/aquaculture projects/programmes, this could be relevant to the Sustainable Aquaculture Research Networks in Sub-Saharan Africa (SARNISSA). With regard to the inclusion of fisheries/aquaculture in existing CCA/DRM projects/programmes, this could be relevant for the Great Green Wall project (see Annex 7.7).
9. Strengthen partnerships between organizations so as to share practical lessons on CCA and DRM and improve strategic planning to increase resilience. Applicable to: cooperation between the LMEs in the GCLME and CCLME and also other African LMEs, e.g. BCLME and ASCLME.
10. Integrated coastal management⁵³. Applicable to: Cameroon and Guinea.
11. Supporting implementation of priority actions in national planning where fisheries and aquaculture are mentioned, in the NAPAs of LDCs by supporting the development of project identification forms (PIFs). Applicable to: 12 countries have identified relevant actions (for details see Annex 7.9.) However, these also need to be considered alongside the gaps identified in Section 5.2.
12. Supporting local, national and regional policy linkages and two-way communication through pilot activities for the development and implementation of DRM and CCA plans in a participatory and integrated manner in selected fishing/fish farming communities and countries. Applicable to⁵⁴: 20⁵⁵ of the countries identified vulnerabilities with regard to extreme weather (floods, droughts, heavy rain, etc.) and sea level rise, but only nine⁵⁶ of these proposed specific priority actions aimed at addressing the vulnerabilities.

⁴⁸ The workshop recommended that improvements be made to the value chain and that product diversification be increased to reduce post-harvest losses and improve hygiene, with a particular focus on the role of women.

⁴⁹ The workshop noted that in terms of *inland fisheries*, strengthening of community-based organizations and collaboration with other food-producing sectors was particularly important.

⁵⁰ The workshop recommended diversification of income by creating alternative livelihoods, along with related capacity building.

⁵¹ The workshop recommended the use of integrated management approaches such as EAF and EAA.

⁵² Relevant member countries, namely Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Côte d'Ivoire, Eq. Guinea, Gabon, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone and Togo.

⁵³ The workshop noted that of particular concern in *marine fisheries* were coastal management plans.

⁵⁴ Notably, none of the gaps of Section 4.2 related to *emergency preparedness*.

⁵⁵ Exceptions: Burkina Faso, Côte d'Ivoire and Equatorial Guinea.

⁵⁶ Namely, Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Ghana, São Tomé and Príncipe, Senegal and Togo.

5.5.3 Managing effective response and improving preparedness for disasters and climate change⁵⁷

1. Establish DRM committees, or link with co-management or community development committees trained in risk assessment, management and communication at different levels. Applicable to: 20⁵⁸ of the countries identified vulnerabilities with regard to extreme weather (floods, droughts, heavy rain, etc.) and sea level rise, but only nine⁵⁹ of these proposed specific priority actions aimed at addressing the vulnerabilities.
2. Improve collaboration between fisheries administrations and national DRM institutes, with better provision for DRM support in disaster-prone areas, better information flow at all levels and across sectors and capacity building and involvement of fishing communities in national contingency planning. Applicable to: 20 countries as mentioned above, although no direct gaps were identified in 5.2.
3. Establish a framework for safety at sea, including making safety equipment available on national and local markets and training fishers in safe fishing and navigation practices. Applicable to: 20 countries as mentioned above, although no direct gaps were identified in 5.2.

5.5.4 Improved early warning systems and availability of information

1. Establish early warning systems at local, national and international levels. Applicable to: 20⁶⁰ countries identified vulnerabilities with regard to extreme weather (floods, droughts, heavy rain, etc.) and sea level rise, but only nine⁶¹ of these proposed specific priority actions aimed at addressing the vulnerabilities. Republic of Congo identified an early warning system as a gap.
2. Strengthen regional research that provides improved understanding of climate change impacts and knowledge to reduce uncertainty e.g. by analysing historic data to develop baseline information and through surveys using the R/V Dr Fridtjof Nansen. Applicable to: the CCLME countries.

5.5.5 Conclusion of gap analysis

In summary, of the 27 gaps/recommendations identified, ten gaps/recommendations were identified for the area “strengthened governance to address disasters and climate change impacts affecting fisheries and aquaculture” by the gap analysis process and six by experts and stakeholders. Twelve gaps/recommendations were identified in the area of “addressing and reducing underlying risks through prevention and adaptation measures. Only three gaps/recommendations were identified for “managing effective response and improving preparedness for disasters and climate change”; although it is noted that, in general, the gaps and recommendations identified did not fully address effective response and preparedness for disasters and climate change and very few projects or interventions were identified in this area. Two gaps/recommendations for “improved early warning systems and availability of information” were all identified by experts and stakeholders and this was an area of focus in the workshop. In the gap analysis process, only one country identified early warning systems as a prioritized need.

Importantly, this chapter provides specific and general suggestions for those considering supporting the development of actions in the area of fisheries/aquaculture and CCA/DRM in Western and Central Africa. Criteria for prioritization of the above actions will vary between players and organizations but a prioritization process applicable to the NFFP and its Component C is presented in Chapter 5.

⁵⁷ The workshop also recommended the following: improve access to microfinance and insurance schemes and increase access to, and use of, environmentally friendly technology, e.g. solar panels, energy-efficient ovens and fiberglass canoes.

⁵⁸ Exceptions: Burkina Faso, Côte d’Ivoire and Equatorial Guinea.

⁵⁹ Namely, Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Ghana, São Tomé and Príncipe, Senegal and Togo.

⁶⁰ Exceptions: Burkina Faso, Côte d’Ivoire and Equatorial Guinea.

⁶¹ Namely, Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Ghana, São Tomé and Príncipe, Senegal and Togo.

6. Prioritization process and next steps for NFFP Component C

6.1 Methodology for scoring and ranking gaps/recommendations

Having identified gaps/recommendations with regard to the support and actions needed to address CCA and DRM in fisheries and aquaculture, the next step was to use a scoring system to rank each gap/recommendation. This was done by considering each gap/recommendation in relation to certain criteria compiled from relevant NEPAD/FAO priorities in relation to NFFP Component C. The four criteria for prioritizing the type of support and beneficiary were, that the support should:

- 1) benefit – directly or indirectly – identified primary stakeholders and target beneficiaries among fishers, fish farmers and fishworkers in coastal and inland water areas, their families and their communities, and also community organizations, local authorities, government organizations and institutions responsible for DRM and CCA and fisheries and aquaculture;
- 2) prioritize least developed countries (LDCs) and vulnerable groups;
- 3) take advantage of synergy effects through collaboration with existing FAO and partner initiatives, programmes and projects; and
- 4) have potential for significant results and scaling-up possibilities.

Scores were allocated to each gap/recommendation (now a proposed action) against the above criteria by allocating a 0, 0.5, or 1 to suggest no correspondence, some or limited correspondence and high or full correspondence. A fuller explanation of the reasoning behind this scoring for each of the criteria is:

- **Benefit:** gaps/recommendations that were deemed to have more direct benefits were given a higher score (1) than those deemed only to have indirect benefits (0.5) or no benefits (0).
- **LDCs:** it was assumed that LDCs would be prioritized and that identified vulnerable groups within these would be further prioritized. Therefore, if one or more LDC was deemed suitable for implementation, a higher score (1) was given.
- **Synergy:** potential synergy effects with other FAO projects and direct partners (e.g. fisheries bodies and NEPAD) were given a higher score (1).
- **Scaling up:** when it was deemed likely that pilot projects could be identified and would be followed by up-scaling, a higher score (1) was given than if this was deemed unsuitable or not possible.

6.2 Result of scoring and ranking

Tables 4 to 7 show the scoring of the gaps/recommendations mentioned in 5.2– .4 according to the categories mentioned in Chapter 5.5 and against the four criteria given above for the selection of priority interventions for the programme.

Table 4: Prioritization scoring of gaps and recommendations for area 1 – Strengthened governance to address disasters and climate change impacts affecting fisheries and aquaculture

Gap/recommendation	Correspondence with relevant prioritization criteria				
	Benefit	LDCs	Synergy	Scaling up	Total
1.1 Promote the dissemination of gained experiences and lessons learnt in order for them to feed into national, sub-regional and regional level policies and strategies through, for example, the organization of best practices exchange workshops, co-prepared and organized with RECs and/or RFBs and the development of guidelines and/or other publications. This recommendation may be specifically relevant for inclusion in the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa that is currently being developed by NPCA and AU.	0.5	1	1	1	3.5
1.2 Support opportunities for improved policy coherence and coordination of DRM and CCA initiatives in fisheries and aquaculture including, for example, the establishment of a working group on climate change and disasters in fisheries and aquaculture within NEPAD and the preparation of joint actions such as policy briefs on climate change, disasters and crises to inform CAMFA.	0.5	1	1	1	3.5
1.3 Strengthen interventions underway in RFBs and shared water bodies to relate more specifically to CCA/DRM, with the aim of mainstreaming and addressing vulnerabilities. This may be applicable to various organizations, but an opportunity was identified within the LCBC for the Prodebalt project.	1	1	1	0.5	3.5
1.4 Enhance collaboration between RECs, RFBs, LMEs and river/lake basin organizations on fisheries/aquaculture and CCA/DRM-related policy formulation and establish procedures for information sharing with other transboundary information sharing protocols, as required. Considering the substantial geographical overlap between ECOWAS, GCLME, CCLME and FCWC, and their shared concerns with regard to CCA and DRR, and the LCBC and related RECs, general coordination of activities and information sharing could be warranted in the subregion.	0.5	1	1	0.5	3
1.5 Climate proof the national CAADP investment plans and provide step-by-step guidance on how to achieve this. Applicable broadly, but particularly to countries that have identified their fisheries as underdeveloped and/or with potential: CAR, Republic of Congo, DRC, Gabon, Mali (also aquaculture potential), Niger, São Tomé & Príncipe and Togo (aquaculture); also countries that have identified aquaculture as a priority: Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Republic of Congo, Ghana, Guinea, Mali, Nigeria, Senegal, Sierra Leone and Togo.	0.5	1	1	0.5	3
1.6 Support the inclusion of fisheries and aquaculture in national planning processes and frameworks, taking into consideration community needs, such as in the NAPAs, National Communications, CAADP compacts, PRSPs, DRM policies and plans, UNDAFs, etc. This was specifically identified as a gap for UNDAFs (in Benin, Burkina Faso, Cameroon, CAR, Chad, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Guinea, Mali, Niger, Nigeria, Senegal and Togo) and CAADPs (in Burkina Faso, Equatorial Guinea, Liberia, Mali, Niger, Nigeria and Togo). With regard to aquaculture, there might be a need for broader inclusion, e.g. in NAPAs and National Communications. Although the promotion of aquaculture or aquaculture development are often listed as priority actions, the vulnerabilities of aquaculture in relation to disaster risks and climate change may need greater consideration.	0.5	1	1	0.5	3
1.7 Support the inclusion of fisheries/aquaculture in existing CCA/DRM policy and strategy processes and vice versa, and specifically ensure the identification of actions to address vulnerabilities, as appropriate. This would be applicable to the ECOWAS Programme of Action (2010–2014) for DRR, the African Regional Strategy for DRR, the CAMFA process and the related Comprehensive African Fisheries Reform Policy and Strategy.	0.5	1	1	0.5	3
1.8 Support the implementation of the FCWC 2011–2020 Strategic Implementation Programme with regard to its climate change components.	0.5	1	1	0.5	3
1.9 Mainstream gender in fisheries management . This is broadly applicable.	0.5	1	1	0	2.5
1.10 Strengthen fisheries legislation/policy. This is broadly applicable but was identified as a gap by Cameroon and Republic of Congo.	0.5	0	1	0	1.5

Table 5: Prioritization scoring of gaps and recommendations for area 2 – Addressing and reducing underlying risks through prevention and adaptation measures

Gap/recommendation	Correspondence with relevant prioritization criteria				
	Benefit	LDCs	Synergy	Scaling up	Total
2.1 Support local, national and regional policy linkages and two-way communication through pilot activities for the development and implementation of DRM and CCA plans in a participatory and integrated manner in selected fishing/fish farming communities and countries. This was noted as a gap in 20 countries (exceptions: Burkina Faso, Côte d'Ivoire and Equatorial Guinea) that had identified vulnerabilities with regard to extreme weather (floods, droughts, heavy rain, etc.) and sea level rise, but only Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Ghana, São Tomé & Príncipe, Senegal and Togo proposed specific priority actions aimed at addressing the vulnerabilities.	1	1	1	1	4
2.2 Support implementation of priority actions in national planning where fisheries and aquaculture are mentioned, in the NAPAs of LDCs by supporting the development of project identification forms (PIFs). Noted as a gap in Benin, Burkina Faso, Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Niger, São Tomé & Príncipe, Senegal, Sierra Leone and Togo.	0.5	1	1	1	3.5
2.3 Promote approaches and practices such as EAF and EAA, which contribute to reducing the exposure and vulnerability of communities by developing and implementing management plans, taking into account CCA and DRM needs and support implementation. This is broadly applicable but a logical start could be to begin with the countries involved in the EAF-Nansen project, namely Benin, Cameroon, Cape Verde, Republic of Congo, DRC, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, São Tomé & Príncipe, Senegal, Sierra Leone and Togo. This was also noted by the workshop to be for LCBC.	0.5	1	1	1	3.5
2.4 Improve post-harvest handling and the processing and marketing of products along the value chain so as to increase product diversification and reduce post-harvest losses, with a particular focus on women's role in fish processing. This was identified by the Republic of Congo, DRC, Ghana, Guinea and Guinea-Bissau, but is also applicable across many countries. This was also noted by the workshop to be for LCBC.	1	1	0.5	1	3.5
2.5 Reduce illegal and overfishing. These were identified as key reasons for reducing the access of vulnerable communities to resources (especially in times of crisis) and increasing the risks they are exposed to. Therefore, reducing illegal/overfishing will increase their ability to cope with climate change effects and disasters. Specific priorities include improved monitoring, control and surveillance in Cameroon, Republic of Congo, DRC, Gambia and Guinea, while generally the NPCA/PAF Stop Illegal Fishing Working Group can promote best practice across the region.	1	1	0.5	0.5	3
2.6 Support at a regional/programme level for aquaculture development so as to provide support for recognising aquaculture development as an adaptation measure in itself (to diversify food sources and livelihoods) and also to introduce CCA and DRM measures in aquaculture. Such support could be undertaken in collaboration with SARINSA, or the NPCA/PAF AWG and ANAF. This could facilitate the further implementation of the FAO draft Fisheries and Aquaculture Department strategy for DRM and CCA in Africa.	0.5	1	0.5	1	3
2.7 Support at a national level for aquaculture development, including capacity building, infrastructure and inputs (e.g. provision of fingerlings, etc.) as a means to improve resilience by diversifying the food sources and livelihoods of vulnerable communities and individuals. This gap was identified for ten countries, namely Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Republic of Congo, Ghana, Mali, Senegal and Sierra Leone. For two countries, Guinea and Togo, there appeared to be a gap relating to integrated fish farming.	0.5	1	0.5	1	3
2.8 Promote and strengthen livelihood activities, including livelihood diversification, to increase resilience to climate change and disasters. This was specifically noted as a gap in Cape Verde, DRC, Guinea and Mali.	1	1	0.5	0.5	3
2.9 Strengthen partnerships between organizations to share practical lessons on CCA and DRM and improve strategic planning to increase resilience. This is widely applicable but in particular to strengthen cooperation between GCLME and CCLME and also with other African LMEs e.g. BCLME and ASCLME.	0.5	1	1	0.5	3

Gap/recommendation	Correspondence with relevant prioritization criteria				
	Benefit	LDCs	Synergy	Scaling up	Total
2.10 Support the inclusion of CCA/DRM or fisheries/aquaculture in existing CCA/DRM or fisheries/aquaculture projects/programmes, as appropriate. This could be relevant for many projects but it may be specifically relevant for the SPFIF, SARNISSA. With regard to inclusion of fisheries/aquaculture in existing CCA/DRM projects/programmes, this could be relevant for the Great Green Wall project (see Annex 7.7).	0.5	1	1	0	2.5
2.11 Develop inland fisheries to offer alternative fish food sources and strengthen national resilience. This was identified as a gap by Ghana and Guinea, while the workshop noted that to make inland fisheries more resilient to disasters and climate change effects, the strengthening of community-based organizations and collaboration with other food-producing sectors was particularly important.	0.5	1	0.5	0	2
2.12 Improve and strengthen integrated coastal management to provide improved identification and reduction of risks from climate change and disasters. This was noted as a gap for vulnerable communities in Cameroon and Guinea and also noted by the workshop to be for marine fisheries in general.	0.5	1	0	0.5	2

Table 6: Prioritization scoring of gaps and recommendations for area 3 – Managing effective response and improving preparedness for disasters and climate change

Gap/Recommendation	Correspondence with relevant prioritization criteria				
	Benefit	LDCs	Synergy	Scaling up	Total
3.1. Establish a framework for safety at sea, including making safety equipment available on national and local markets and training for fishers in safe fishing and navigation practices. Applicable to all countries with vulnerabilities to extreme weather events, although no direct gaps were identified in 5.2.	1	1	1	1	4
3.2 Establish DRM committees, or link with co-management or community development committees trained in risk assessment, management and communication at different levels. Identified in the workshop for all countries, but notably, none of the gaps of Section 5.2 related to <i>emergency preparedness</i> .	1	1	1	1	4
3.3 Improve collaboration between fisheries administrations and national DRM institutes, with better provision for DRM support in disaster-prone areas, better information flow at all levels and across sectors, capacity building and involvement of fishing communities in national contingency planning. Applicable to all countries, although no direct gaps were identified in 5.2.	0.5	1	1	1	3.5

Table 7: Prioritization scoring of gaps and recommendations for area 4 – Improved early warning systems and availability of information

Gap/recommendation	Correspondence with relevant prioritization criteria				
	Benefit	LDCs	Synergy	Scaling up	Total
4.1 Establish early warning systems at local, national and international levels. Applicable to 20 countries (exceptions: Burkina Faso, Côte d'Ivoire and Equatorial Guinea) that identified vulnerabilities with regard to extreme weather (floods, droughts, heavy rain, etc.) and sea level rise. Republic of Congo identified a specific gap with respect to early warning systems.	1	1	1	1	4
4.2 Strengthen regional research that provides improved understanding of climate change impacts and knowledge to reduce uncertainty, e.g. such as by analysing historic data to develop baseline information and by using the R/V <i>Dr Fridtjof Nansen</i> for surveys. This was relevant for the CCLME countries that attended the workshop.	0.5	1	1	0.5	3

6.3 Prioritization process

The gaps/recommendations that scored the highest with regard to the criteria for NFFP Component C are listed below. However, the final decision on which priorities to incorporate in the NFFP Component C will also depend on factors such as budget and timeframe:

- 4.1 Establish early warning systems at local, national and international levels. Applicable to 21 countries. Scoring 4.
- 3.1 Establish a framework for safety at sea, including making safety equipment available on markets and training of fishers in safe fishing and navigation practices. Applicable to all countries with vulnerabilities to extreme weather events (20). Scoring 4.
- 3.2 Establish DRM committees, or link with co-management or community committees trained in risk assessment, management and communication at different levels. Applicable to all countries. Scoring 4.
- 3.3 Improve collaboration between fisheries administrations and national DRM institutes, with better provision for DRM support in disaster-prone areas, better information flow at all levels and across sectors, capacity building and involvement of fishing communities in national contingency planning. Applicable to all countries. Scoring 3.
- 2.1 Support local, national and regional policy linkages and two-way communication through pilot activities for the development and implementation of DRM and CCA participatory plans in selected fishing/fish farming communities and countries. Applicable to 20 countries. Scoring 4.2.2 Support implementation of priority actions in national planning where fisheries and aquaculture are mentioned, in the NAPAs of LDCs by supporting the development of project identification forms (PIFs). Applicable to 12 countries. Scoring 3.5.
- 2.3 Promote approaches and practices such as EAF and EAA, which contribute to reducing vulnerability of communities by developing and implementing management plans, taking into account CCA and DRM needs and support implementation. This is broadly applicable but a logical start could be to begin with the countries involved in the EAF-Nansen project as well as follow up on workshop recommendation in the LCBC. Scoring 3.5.
- 2.4 Improve post-harvest handling and processing and marketing of products along the value chain and increase product diversification so as to reduce post-harvest losses and improve hygiene, with a particular focus on the role of women. Identified as a gap in five countries and in the workshop recommendation but also applicable across many countries. Scoring 3.5.
- 1.1 Promote the dissemination of gained experiences and lessons learnt in order for them to feed into national, sub-regional and regional level policies and strategies through, for example, the organization of best practices exchange workshops, co-prepared and organized with RECs and/or RFBs and the development of guidelines and/or other publications. Scoring 3.5.
- 1.2 Support opportunities for improved policy coherence and coordination of DRM and CCA initiatives in fisheries and aquaculture, including the establishment of a working group on climate change and disasters in fisheries and aquaculture within NEPAD and the preparation of joint policy briefs on climate change, disasters and crises to inform CAMFA. Scoring 3.5.
- 1.3 Strengthen interventions underway in RFBs and shared water bodies to relate more specifically to CCA/DRM, with the aim of mainstreaming and addressing vulnerabilities. Specifically in the LCBC for the Prodebalt project. Scoring 3.5.

6.4 Next steps

The next steps for NFFP Component C are to decide on a preferred prioritization approach and then develop a work plan based on addressing the resulting gaps/recommendations.

The findings of this gap analysis, and the companion gap analysis for Southern and Eastern Africa, could be used to inform the ongoing CAMFA process. It will also provide valuable insights that may be useful in the formulation of the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa.

7. Annexes

7.1 African, regional and subregional bodies considered in the analysis and documents identified

The following integration bodies were considered to be relevant to fisheries and aquaculture or CCA and DRM in the Western and Central African region. Each organization was contacted and their websites searched to identify relevant policies, strategies or frameworks related to fisheries and aquaculture or CCA and DRM. The results are presented below by category of integration body.

7.1.1 African

1. **African Union (AU)** – all AU member states:
 - a. Report of the Conference of the Ministers of Fisheries and Aquaculture (CAMFA, 2010)
 - b. African Regional Strategy for Disaster Risk Reduction (2004)
2. **New Partnership for African Development (NEPAD)** – all AU member states:
 - a. NEPAD Action plan for the development of African fisheries and aquaculture (2004)
 - b. NEPAD Agency Environmental Action Plan (2003)

7.1.2 Regional economic communities

(Only member states that are included in the study area of this gap analysis are listed)

1. **Economic Community for West African States (ECOWAS)** – Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo:
 - a. ECOWAS Agricultural Policy (ECOWAP – 2008)
 - b. ECOWAS DRR Programme of Action for the Implementation of the ECOWAS policy for Disaster Risk Reduction 2010–2014 (2010)
 - c. ECOWAS Environmental Policy (2008)
 - d. Regional Partnership Compact for the implementation of the ECOWAP CAADP (2009)
2. **Commission of the Economic and Monetary Union of Central Africa (CEMAC)** – Cameroon, CAR, Chad, Congo, Equatorial Guinea and Gabon:
 - a. No relevant documents were found
3. **Community of Sahel-Saharan States (CEN-SAD)** – Benin, Burkina Faso, CAR, Chad, Côte d'Ivoire, Djibouti, Gambia, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone and Togo:
 - a. No relevant documents were found
4. **Economic Community of Central African States (ECCAS)** – Cameroon, CAR, Chad, DRC, Gabon, Guinea and São Tomé and Príncipe:
 - a. No relevant documents were found
5. **West African Economic and Monetary Union (WAEMU)** – Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo:
 - a. No relevant documents were found

7.1.3 *Shared water bodies*

1. **Canary Current Large Marine Ecosystem (CCLME)** – Cape Verde, Gambia, Guinea, Guinea-Bissau and Senegal:
 - a. CCLME Project Document (2009)
2. **Guinea Current Large Marine Ecosystem (GCLME)** – Congo, Equatorial Guinea, Cameroon, Niger, Nigeria, Benin, Togo, Ghana, Ivory coast, Liberia, Sierra Leone, Guinea and Guinea Bissau:
 - a. GCLME Strategic Action Programme (2008)
3. **Lake Chad Basin Commission (LCBC)** – Cameroon, CAR, Chad, Niger and Nigeria
 - a. Strategic Action Programme for the Lake Chad Basin (2008)

7.1.4 *Regional fisheries bodies*

1. **Fishery Committee of the West Central Gulf of Guinea (FCWC)** – Benin, Côte d'Ivoire, Ghana, Nigeria, Liberia and Togo:
 - a. FCWC 2011– 2020 Strategic Implementation Programme (2011)
2. **Committee for the Eastern Central Atlantic fisheries (CECAF)** – Benin, Cameroon, Cape Verde, Congo, Côte d'Ivoire, DRC, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, Togo:
 - a. No relevant documents were found
3. **Regional fisheries Committee for the Gulf of Guinea (COREP)** – Congo, DRC, Gabon, São Tomé and Príncipe:
 - a. COREP Strategic Action Plan (SAP) 2009–2014 (2008)
4. **Sub Regional Fisheries Commission (SRFC)** – Cape Verde, Gambia, Guinea, Guinea Bissau, Mauritania, Senegal and Sierra Leone:
 - a. No relevant documents were found
5. **Committee for Inland Fisheries and Aquaculture of Africa (CIFAA)** – Benin, Burkina Faso, Cameroon, CAR, Chad, Congo, Côte d'Ivoire, DRC, Gabon, Gambia, Ghana, Guinea, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo:
 - a. No relevant documents were found
6. **Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean (COMHAFAT)** - Benin, Cameroon, Cape Verde, Côte d'Ivoire, Congo, DRC, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, São Tomé and Príncipe,, Senegal, Sierra Leone and Togo:
 - a. No relevant documents were found

7.2 Regional priorities in fisheries and aquaculture in respect to climate change and disasters

Below is a summary of the integration of fisheries and aquaculture in respect to disasters and climate change on a sub-regional level based on frameworks and strategies of relevant institutions and organizations. These included regional economic communities (RECs), large marine ecosystems (LMEs) and NEPAD. The methodology employed for summarizing the national priorities was adopted to consider how well integrated fisheries and aquaculture is at the regional level.

Key: Grey boxes indicate that the criteria were met for that document.

	Pan-African				RECs				Shared water bodies and RFBs				Summary	
	Record of the CAMFA (2010)	Africa Regional Strategy for Disaster Risk Reduction (2004)	NEPAD Agency Environmental Action Plan (2003)	NEPAD Action plan for the development of African fisheries and aquaculture (2005)	Regional Partnership Compact for the implementation of the ECOWAP CAADP (2009)	ECOWAS Regional Agricultural Policy (ECOWAP-2008)	ECOWAS DRR Programme of Action for imp. of the DRR policy (2010)	ECOWAS Environmental Policy (2008)	CCLME Project Document (2009)	GCLME SAP (2008)	LCBC SAP (2008)	FCWC Strategic Implementation Programme (2011)	COREP SAP (2008)	
Importance of sector noted														<ul style="list-style-type: none"> o Fisheries were discussed more specifically and in more detail in the LME project documents. o The ECOWAS DRR Programme of Action did not cover fisheries, nor is it mentioned in the ECOWAP Compact, however, a key component identified in the compact is integrating climate change adaptation into the management of shared natural resources and production systems. o In the LCBC SAP the importance of the fisheries sector is not explicitly stated, but rather implied through references to fisheries in other contexts, for example the effect that water pollution may have on the fisheries. A fisheries management plan is also discussed, which suggests that importance is placed on fisheries and aquaculture.
Specific vulnerabilities identified (of relevance to the sector)														<ul style="list-style-type: none"> o Vulnerabilities resulting from poor management of fisheries resources, such as overfishing, biodiversity loss and illegal fishing, were often noted. o Relative to these other vulnerabilities CC and disasters were not discussed as closely. In the case of the only DRR specific document (ECOWAS DRR Programme of Action), fisheries were not covered.
Women/vulnerable groups identified														<ul style="list-style-type: none"> o Coverage of this criterion was weak overall. o In the ECOWAS Environmental Policy, women are mentioned briefly as relevant stakeholders.
Specific actions proposed to address the vulnerabilities														<ul style="list-style-type: none"> o The ECOWAS Policy includes a strategy to address climate change threats in order to achieve an overall goal of political and economic prosperity in the region through sustainable development. o Both LME documents state various plans to develop baseline studies on climate change in conjunction with the FAO's EAF-Nansen project.

7.3 National priorities in fisheries and aquaculture in respect to climate change and disasters

This section contains summaries of the mapping of national priorities for fisheries and aquaculture in respect to disasters and climate change.

Key: Grey boxes indicate that the criteria were met for that document, while more lightly shaded boxes in the header column indicate that the document was not reviewed, as explained in footnotes.

7.3.1 Benin (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> One of the four programmes of the National Compact of Benin is aimed at the development of fisheries and aquaculture. In 2000, fisheries contributed three percent towards GDP. That same year, fisheries generated a total of over 600 000 jobs directly and indirectly. The sector also contributes to food security and animal protein intake.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> Vulnerabilities include significant post-harvest losses, floods, heavy rains and drought. Sea level rise along Benin's 121 kilometres of coastline is also a concern. Rising sea levels and increased coastal erosion have already been observed and are threatening vulnerable communities and the least protected, sensitive ecosystems. Increases in temperature may lead to changes in the life cycles of certain species. Other impacts may include: changes in the range of species along the coast; decline in productivity; decline in the income of fishing communities. Fishers dependent on river fishing are also exposed to climate change owing to the particular sensitivity of fluvial species to climate disturbances. Mining activities in fishing grounds exacerbate natural resource degradation. Human population pressure has led to overexploitation of fisheries resources.
<i>Women/vulnerable groups identified</i>							<ul style="list-style-type: none"> Social groups such as fishers, farmers and tourists could be most affected by climate change. Groups most vulnerable to food insecurity include small-scale farmers in the South, fishing communities and low-income families in urban zones.
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> Gaps in current adaptation action appear to be in the areas of coastal zone management. Adaptation options include protection of the coast against rising sea levels, flood management and aquaculture. Promotion of aquaculture should include the development of technical skills and incentives and the production of specific inputs to aquaculture. Ensure sustainable management of fishing grounds.

7.3.2 Burkina Faso (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP ⁶²	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> ○ Agricultural activities and forestry occupy 86 percent of the workforce and contribute 40 percent of GDP (25 percent for agriculture, 12 percent for livestock, three percent for forestry and fishing). These primary activities are considered the main sources of economic growth.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							
<i>Women/vulnerable groups identified</i>							<ul style="list-style-type: none"> ○ Communities at risk include rural and fisheries households.
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ Regulation of village fishing; stocking of some rivers; aquaculture development.

⁶² The sector is mentioned, but without specifics.

7.3.3 Cameroon (not LDC)

Criteria	NAPA ⁶³	NC	PRSP	UNDAF	CAADP ⁶⁴	Review 2011	Summary
<i>Importance of sector noted</i>							
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> Concerns regarding coastal zones include the potential for sea level rise to adversely affect mangrove forests by flooding and coastal erosion. Along with changes in temperatures, this process could change the mangrove ecosystem and thereby affect the local shrimp fisheries. A sea level rise greater than 50 cm could destroy shrimp habitats through erosion, hampering their normal development. Sea level rise is also expected to cause saltwater to intrude into the Dibamba and Wouri rivers and into coastal aquifers, negatively affecting agriculture. Rising sea level could result in the permanent inundation of some fishing villages, resulting in the destruction of homes of fishers. Reconstruction of homes destroyed will cause additional pressure on mangrove vegetation. Related floods may also cause migration of fishers and their families.
<i>Women/ vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> Coastal zone management has been identified as a central component of the National Plan for Environmental Management. With Cameroon's high vulnerability to sea level rise, coastal adaptation strategies will be included under the plan. Fisheries: support commercial aquaculture (including capacity building); combat illegal and irresponsible fishing practices; set up an effective monitoring and control system; strengthen fisheries legislation; and reduce land-based pollution. Other relevant adaptation measures focus on reforestation, creation of reserves and limitation of mangrove removal. Elevation of fishing community houses

⁶³ Not a LDC.

⁶⁴ Unsigned

7.3.4 Cape Verde (not LDC)

Criteria	NAPA ⁶⁵	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
<i>Importance of sector noted</i>							
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ Tourism and coastal zones, biodiversity and fisheries were identified among priority sectors (in the NAPA); e.g. fisheries resources and coral reefs are threatened by climate change. ○ The main effects of a possible rise in sea level would include increased coastal erosion and partial flooding, depending on the tides. ○ Climate induced changes include seasonal water shortages and an increase in climate variability that is likely to result in more storms, floods, droughts and a shorter rainy season. On the western coast of Africa, temperature variation in the oceans will impact on the monsoon. ○ Impacts on fisheries: decrease in resource; change in migratory species routes; decrease in employment and household income; degradation and loss of marine habitat; food insecurity; destruction of port infrastructure; decreased visibility. ○ Wind intensification means increased intensity in coastal erosion; change in the coastal morphology; disappearance of beaches; degradation of the marine and coastal environment; change in the intensity of ocean currents; increased intensity of coastal degradation owing to the change in the amplitude of waves; and tidal aggression.
<i>Women/vulnerable groups identified</i>							<ul style="list-style-type: none"> ○ Agriculture and fisheries workers are more likely to be poor than those in other sectors.
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ Support diversification of livelihoods (e.g. training and micro-credit); modernization of artisanal fishing; promote training and technical capacity building of fishers; research on fishery potential and stock evaluation; promote studies on the establishment of marine protected areas; feasibility assessment to introduce fish farming; protecting and preventing degradation of the coastal zones caused by extreme climatic events and tourism; rehabilitate and/or construct infrastructure for protection of coastal zones; and modernize the network of climate and maritime monitoring stations. ○ NB: several of the current adaptation projects focus on coastal management, fisheries and freshwater resources management – the majority through regional projects.

⁶⁵ In 2007 Cape Verde was re-categorized as a non-LDC, so the NAPA pre-dates this change.

7.3.5 Central African Republic (LDC)

Criteria	NAPA	NC	PRSP	UNDAF ⁶⁶	CAADP ⁶⁷	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> ○ Sixty-three percent of poor households depend on jobs in agriculture, livestock breeding and fishing. ○ There is a lack of targeted measures and inadequate investment in the food production, livestock breeding and fishing sectors. However, those are key sectors in the fight against poverty in CAR because they form the livelihood of most people, making up close to half of GDP in recent years. ○ CAADP is not signed. The priority investments of the NAPA for the period 2011 to 2015, include fishing and aquaculture.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ A significant increase in runoff (more than 35 percent) as a result of more intense rainfall events could lead to shifts in biodiversity and ecosystems. ○ Adverse climate change impacts could include increased risk of flooding, damage to dam infrastructure, and lowered agricultural productivity. Flooding along the country's rivers has been identified as the principal threat for both farmland and pastures. ○ A rainfall deficit could result in a decrease in fishing productivity and a related decrease in income from fishing. Excessive rainfall could result in siltation of rivers and a related reduction in fishing potential.
<i>Women/vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ Promote fisheries and aquaculture (currently underexploited and with potential) and ensure sustainable fishing.

⁶⁶ The sector is mentioned, but without specifics.

⁶⁷ Unsigned.

7.3.6 Chad (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP ⁶⁸	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> ○ The traditional bases of the economy are food crops, livestock and fisheries. ○ Fishing plays an important role in the economy (accounting for approximately ten percent of GDP) and is practiced in many water bodies around the country. These include Lake Chad, the Chari-Logone system and other lakes and floodplains.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ The most vulnerable sectors are water resources, agriculture, livestock, fisheries and forestry. ○ Potential impacts of climate change include reduced agricultural productivity in the south, failed harvests in the Sahelien belt, livestock deaths owing to insufficient water resources and reduced fish populations. Concerns include an increase in the number of subsistence fishers who have abandoned agriculture and livestock for fishing; migration towards Lake Chad; and reduced fish stocks. ○ A significant increase in extreme rainfall events has been projected, which could increase runoff and flooding conditions.
<i>Women/vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							

⁶⁸ Not available

7.3.7 Congo, the Republic of (not LDC)

Criteria	NAPA ⁶⁹	NC	PRSP	UNDAF ⁷⁰	CAADP ⁷¹	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> ○ The contribution of fisheries to the national economy remains modest, despite its huge potential. ○ Agriculture and fisheries production is not sufficient to ensure food security in Congo.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> ○ Congo's coastal zone is considered to be the most vulnerable, particularly as a result of salt water intrusion and flooding caused by sea level rise. ○ Coastal ecosystems are the most intensively used in the country, being subject to, for example, oil exploration and production, extraction of beach sand and mangrove exploitation. ○ The rapid degradation of aquatic ecosystems owing to the proliferation of invasive water plants, the use of banned gear, explosives, and harmful chemicals, as well as siltation of rivers, could cause irreversible damage to water quality, with serious consequences for fisheries resources and biodiversity as a whole. ○ The major obstacles to fisheries development are: (i) absence of a national fisheries policy; (ii) weak development of the fisheries and aquaculture sector; (iii) lack of processing infrastructure; (iv) lack of sector expertise; (v) unsustainable exploitation; and (vi) deficiencies in the judicial and institutional framework.
Women/vulnerable groups identified							
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> ○ An early warning system is to be put in place for disasters relating to hydrocarbon pollution, erosion, floods and drought. Other appropriate means will also need to be put in place to provide information and facilitate rapid response in the case of disaster. The population should be sensitized and prepared to respond appropriately to disaster risks. ○ Regular monitoring of the coastline and protection of fragile areas subject to unregulated occupation should be carried out to tackle the impacts of erosion. ○ Other actions: developing a fisheries policy; promotion of aquaculture; monitoring, control and surveillance in the EEZ; development of processing and marketing infrastructure for fisheries and aquaculture products; development of expertise, including research; and strengthening the legal and institutional framework.

⁶⁹ Not a LDC.

⁷⁰ The sector is mentioned, but without specifics.

⁷¹ Unsigned

7.3.8 Côte d'Ivoire (not LDC)

Criteria	NAPA ⁷²	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
<i>Importance of sector noted</i>							
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ Key vulnerabilities include coastal zones and marine ecosystems, water resources, fisheries and biodiversity. ○ Conflicts over the control of natural resources have spread to lagoons, rivers and lakes where tensions are often high between local fishers and those from elsewhere. ○ The country is still highly dependent on imports to meet domestic demand for fish products. ○ The incomes of fishers are low because of a decline in fish production as a result of major post-harvest losses, difficulties in preserving fish products, illegal fishing in the EEZ and unsuitable fish farming.
<i>Women/vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ In the national CAADP compact, sustainable management of fishery resources is the focus of one of the priority programmes. ○ The government promotes participatory management and decentralized planning as part of promoting responsible fishing. A national plan to combat IUU fishing will also be developed.

⁷² Not a LDC.

7.3.9 Democratic Republic of Congo (LDC)

Criteria	NAPA	NC	PRSP	UNDAF ⁷³	CAADP ⁷⁴	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> ○ Nearly 80 percent of people live in rural areas and are principally engaged in agriculture, fishing and stock farming. However, this population lives in a precarious situation and absolute poverty, despite the immense potential of these sectors. ○ The aim of improving livestock and fisheries production is to overcome the protein deficiencies of the population and thereby reduce rates of malnutrition and nutritional deficiency diseases. ○ The fisheries sector has been neglected to date, despite the considerable potential of the Congo River.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> ○ In recent years, heat waves, violent rains, soil degradation, prolonged dry seasons and an increase in droughts and floods have been observed. Erosion has increased along the DRC's short Atlantic coastline since 1980. The region has also experienced loss of biodiversity in the mangrove marine park. Coastal erosion is caused by increased wave energy. ○ Two types of flooding occur: coastal flooding is caused by sea level rise and river flooding is caused by increased precipitation. ○ Results of sea level rise include saline intrusion affecting groundwater and soils of mangroves; loss of biodiversity in the marine mangrove park; and sand deposits. ○ The above impacts result in displacement of people; destruction of cities and villages; destruction of tourist sites; degradation of marine habitats; loss of fishing grounds; and destruction of infrastructure.
Women/vulnerable groups identified							<ul style="list-style-type: none"> ○ Women are now the heads of many household owing to the death of their spouses from armed conflict or HIV/AIDS.
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> ○ Revision of the Master Plan for the development of fishing; combating illegal fishing; regulation of exploitation of the mangrove ecosystem; ensure coastal protection; development of a coastal zone management plan; raising of public awareness; diversification of livelihoods of fishers; reduction of post-harvest losses. ○ The draft national CAADP compact mentions fisheries as part of improving the productivity of agriculture.

⁷³ Not available

⁷⁴ Only draft available.

7.3.10 Equatorial Guinea (LDC)

Criteria	NAPA ⁷⁵	NC ⁷⁶	PRSP ⁷⁷	UNDAF	CAADP	Review 2011	Summary
<i>Importance of sector noted</i>							
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							
<i>Women/vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							

⁷⁵ Not available/does not exist

⁷⁶ Not available/does not exist

⁷⁷ Not available/does not exist

7.3.11 Gabon (not LDC)

Criteria	NAPA ⁷⁸	NC	PRSP ⁷⁹	UNDAF ⁸⁰	CAADP ⁸¹	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> ○ Agriculture, including livestock and fisheries, provides livelihoods for 34 percent of the workforce and contributed 3.9 percent of GDP in 2008. Fisheries is a potential growth sector. ○ At over 40 kg per capita, Gabon's fish consumption is among the highest in Africa.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> ○ The status of fisheries resources is uncertain. Weak sector governance, ineffective monitoring and control and lack of transparency in licensing contribute to the absence of a clear vision for the future of the fisheries sector. ○ The coastal zone has been identified as the region of the country most vulnerable to the impacts of climate change. It is home to 75 percent of the country's population, in part because two of its major urban centres are located on the coast. Projected sea level rise along the Gabon coast could be between 0.13 and 0.56 m. ○ Sea level rise is expected to increase the risk of flooding, particularly in estuaries and deltas; the disbursement of coastal pollution, putting fisheries and mangroves at risk; the salinity of coastal aquifers; and the risk of habitat destruction for coastal communities in Libreville and Port Gentil. ○ Additional concerns are the country's large offshore exclusive economic zone with significant petroleum exploitation and vast fisheries potential. ○ The vulnerability of Gabon's freshwater resources relates primarily to the impact of increased rainfall in some areas, which could potentially impact on fisheries and fish distribution and lead to the destruction of riverine habitat and populations.
Women/vulnerable groups identified							
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> ○ The government aims to develop fisheries as part of its economic diversification. ○ Coastal zone management has been the focus of existing and proposed adaptation projects. ○ In response to concerns about sea level rise, Gabon has proposed several different types of action, including protection of urban and peri-urban coastal zones; protection of mangroves and sensitive/degraded coastal zones; construction of dykes for protection against flooding; resettlement programmes for populations living in areas at risk; and a pilot project on new home construction techniques which are less vulnerable to flooding. ○ Supporting actions include: sustainable management of fisheries; concerted development of the coastal zone, including better control of coastal erosion and pollution; and improved capacity and national expertise with regard to coastal zone management.

⁷⁸ Not a LDC.

⁷⁹ Country Assistance Strategy (World Bank, 2005).

⁸⁰ The sector is mentioned, but without specifics.

⁸¹ Unsigned.

7.3.12 Gambia (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> o Fish is the major source of animal protein for the majority of Gambians. Average annual per capita fish consumption is estimated at 23 kg. As the population continues to expand in The Gambia, fish demand is predicted to increase. o The majority of the Gambian population depends on land-based agriculture, fisheries and harvesting of other natural resources.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> o Nearly half of the country is below mean sea level; a further one third is at or below 10 metres above sea level, and between 10 to 20 percent of its land area floods seasonally or diurnally. In the water sector, the combination of sea level rise, rising average temperatures and changes in rainfall patterns could impact rainfall resources qualitatively and quantitatively. o Climate change is likely to precipitate the collapse of some pelagic fish populations, further threatening food security. Climate change impacts on fisheries are derived from changes to the Eastern Atlantic marine ecosystem, which incorporates the coastal and estuarine areas of the River Gambia. o Changes in seasonal rainfall patterns, combined with sea level rise and global warming, could also alter mangrove ecosystems significantly. Artisanal fishing will also suffer from mangrove losses and changes in the hydrological regime of the River Gambia and its tributaries. The impacts of wetland and mangrove destruction on estuarine productivity and fisheries production are also cause for concern. o Extreme weather, in the form of storms, increases the likelihood of accidents and loss of lives at sea. Considering that half the Gambian population lives in the coastal area, climate change under a business-as-usual scenario could have significant impacts on the coastal environment and societal systems. During the drought years, many ponds and inland waters will dry out, leading to reductions in fish populations. Those that survive the drought will be threatened with pollution.
Women/vulnerable groups identified							<ul style="list-style-type: none"> o Coastal communities. Climate change may undermine the livelihoods and traditional way of life of fisher folk in the country.
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> o The fisheries strategic and management plan calls for stricter control of the exploitation of resources (demersal fish resources are overexploited). This will require a reduction in the number of fishing licenses issued to foreign vessels, improved surveillance of the fishing grounds and an increase in licensing fees for demersal trawlers. The seasonal closure of fisheries spawning grounds and nursery areas could also be implemented. With these measures, the fisheries sector could achieve and maintain healthy fish stocks for sustainable utilisation. In view of the importance of ponds and water bodies in enhancing fish populations, measures should be taken to safeguard the spawning sites and stop the destruction of mangroves (fish nursery areas) and pollution along the coastline and the riverbanks.

7.3.13 Ghana (not LDC)

Criteria	NAPA ⁸²	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> Other than in the urban centres, the main economic activities of the people living in the coastal zone are fishing and farming.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> All the land within the coastal zone below the 3 m contour is potentially vulnerable to the effects of sea level rise. Over 60 percent of this area is located on the east coast of Ghana. The affected areas have population densities of about 120 persons per km². Annual incomes within these areas are relatively low, often below US\$150 per person. The main occupation of the people in this area is farming and fishing. The expected impacts of sea level rise are direct inundation (or submergence) of low-lying wetland and dry-land areas; erosion of sandy shores by increasing offshore loss of sediment; increases in the salinity of estuaries and aquifers; raised coastal water tables; and exacerbated coastal flooding and storm damage. These impacts will in turn influence coastal habitats, biodiversity and socioeconomic activities. The rising water table, as a result of sea level rise, will also increase the risk of earthquake hazards. Marine fish stocks are increasingly being depleted.
Women/vulnerable groups identified							<ul style="list-style-type: none"> The extremely poor or vulnerable include rural agricultural producers and traditional fishers.
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> Promote inland fisheries production, especially aquaculture, e.g. the development of hatcheries and production of fingerlings; construction of ponds, pens and cages; harvesting, control and distribution of water to the production facilities; harvesting and handling of fish; storage, processing and marketing. Prevent the use of prohibited gear which contributes to the depletion of both marine and inland fish habitats. Development and introduction of flood and drought monitoring and control systems. Development of an Integrated Coastal Zone Management System. FAO to: support and coordinate agriculture, livestock and fishery emergency interventions and improve early warning systems for the impact of droughts and floods; provide technical assistance in harmonization of policies regarding quality assurance and safety for crops, animals, fisheries and forestry products; improve capacity for aquaculture and artisanal fisheries development; establish tools for surveillance, monitoring, forecasting and control of pests and diseases of major crops, livestock, poultry, agroforestry, forestry and fisheries. Gender: FAO to provide technical assistance in mainstreaming HIV/AIDS, climate change and gender in agricultural programmes.

⁸² Not a LDC.

7.3.14 Guinea (LDC)

Criteria	NAPA	NC	PRSP	UNDAF ⁸³	CAADP ⁸⁴	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> ○ Fishery resources contribute over 80 percent of animal protein among coastal populations. ○ The fishing and fish farming sector is a major source of export revenue.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ Key impacts: significant decreases in rainfall accompanied by greater rainfall variability and risk of floods and sea level rise. ○ The mangrove forests are important breeding and nursery grounds for several fish species, crustaceans and molluscs, but also form a refuge for juvenile fish. In this regard, they are particularly important for the regeneration of fish stocks in the EEZ. Overfishing in spawning areas and excessive cutting of mangroves disrupt the regeneration of fish stocks. ○ A rise in surface temperature and sea level owing to climate change will lead to a gradual destruction of mangroves, coastal erosion, saline intrusion and degradation of coastal resources. ○ There is a gradual decline in fishing yield, mainly as a result of overfishing and use of prohibited gear. Other threats relate to the incursion of industrial trawlers into areas reserved for artisanal fishing; pollution from the dumping of household waste water, pollution by hydrocarbons, etc.
<i>Women/vulnerable groups identified</i>							<ul style="list-style-type: none"> ○ Socioeconomic groups judged to be most at risk include farmers, fishers and fish smokers.
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ Adaptation actions include farming of mangrove oyster; protection of spawning areas (mangroves); coastal management; combat coastal erosion; livelihood diversification away from fishing (vulnerable sector); and combining rice planting with fish farming. ○ The government aims to ensure monitoring and control of fish catches; strengthening of surveillance; improved fisheries research; development of infrastructure for storing, processing and packaging fish products; development of capacity in the sector's administrative authorities; development of river and lake fishing and fish farming; improved control over the granting of fisheries licenses; and implementation of temporary fishing bans, especially for threatened species.

⁸³ The sector is mentioned, but without specifics.

⁸⁴ Not available/does not exist?

7.3.15 Guinea Bissau (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP ⁸⁵	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> Guinea-Bissau's economy largely depends on agriculture, which accounts for over 60 percent of the country's GDP. Cashew nuts, ground nuts and fish are the predominant export crops. About 70 percent of the population lives in coastal areas, depending almost entirely on ecosystem goods and services. The EEZ has fishery resources of high commercial value and which are important to the economy. About 64 percent of the population of working age (15 years and older) are employed in the agricultural sector (including forestry and fishing).
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> Agriculture, forestry, livestock and fisheries provide livelihoods for the majority of Guinean households and constitute the base of the country's economy. However, these sectors are also the most vulnerable to climate change. The majority of Guinea-Bissau's territory has an altitude of less than 50 m. This exposes the country to coastal erosion, which is expected to worsen as temperatures increase and sea levels rise. Guinea-Bissau is also experiencing irregular rainfall patterns and a longer dry season in some regions. The coast is constantly subject to tides and pressure from fishing and felling of mangroves for use in fish smoking and construction, which exacerbates coastal erosion. Fisheries authorities estimate that catch levels have risen significantly as a result of illegal fishing. Pressure on Guinea-Bissau's fisheries resources tends to rise, not only as a result of population growth, but also owing to public treasury imperatives because the issuance of licenses or multiyear fishing agreements is seen as an important source of revenues. Inland deforestation contributes to siltation, difficulty in the navigation of rivers and lakes and a reduction in fishing resources.
Women/vulnerable groups identified							<ul style="list-style-type: none"> Fishers have been assessed to be among the most vulnerable groups.
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> Actions include, preparation of an Integrated Management Programme of Coastal Resources and a related Plan of Action; modernization of small-scale fishing; improvement of product quality and preservation, etc.

⁸⁵ In Portuguese.

7.3.16 Liberia (LDC)

Criteria	NAPA	NC ⁸⁶	PRSP	UNDAF	CAADP	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> o Fisheries is a source of income Fish represents the main source of animal protein in the typical Liberian diet.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> o A one metre rise in sea level could lead to inundation of about 95 km² of Liberia's coastal area; about half of the land lost would be on the sheltered coast. o Much of the effects of increasing climatic variability and climatic change threaten key economic sectors in Liberia, including fisheries. o It is estimated (from the few studies available) that the combined effect of changing water temperatures and rainfall patterns is adversely affecting fish stocks and leading to a decline in the populations of certain species. When combined with the destruction of habitats (wetland or mangrove swamps), the situation becomes even more serious. o During the civil war, Liberia's entire meteorological and hydrological monitoring capability was destroyed. o During the peak dry season, the drying up of ponds and inland rivers has a major impact on of fish populations. Surviving fish are threatened with pollution, caused by pesticide run-off and industrial discharges. o Coastal and marine ecosystems in Liberia have been subjected to rapid deterioration. As a consequence, flooding, erosion, siltation of seaports and major water bodies are on the increase. o Key challenges are illegal fishing and unsustainable use of natural resources, such as coastal sand mining that leads to coastal erosion.
Women/vulnerable groups identified							<ul style="list-style-type: none"> o The groups most vulnerable to climate risks are those that live in coastal areas and whose livelihoods consist of fishing, farming and low level trading. They are typically the least able to cope with climate-related shocks mainly because of a combination of extreme poverty levels and extremely limited household income-generating activities.
Specific actions proposed to address the vulnerabilities							<p>Major adaptation activities and needs that have been identified are as follows:</p> <ul style="list-style-type: none"> o Reducing the number of fishing licenses issued to foreign vessels. o Raising the licensing fee for demersal trawlers. o Regulating fishing practices to prevent overexploitation and fishing in restricted areas. o Instituting appropriate surveillance of Liberian fishing waters. o Funding research aimed at fishery-related database development. o Formulating a national fishing policy. <p>Others include actions to control beach erosion around seaports and coastal settlements. A comprehensive effort to improve household food security will also be undertaken within the framework of sustainable natural resource management, environmental protection and the promotion of gender equality.</p>

⁸⁶ Does not exist.

7.3.17 Mali (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> Locally farmed catfish and carp are highly appreciated by the public and sell easily on the market. River basins are home to the majority of people in Mali and consequently rivers and fisheries play an essential role in the economy.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> Fisheries are one of the most vulnerable sectors with regard to climate change. The country already experiences a number of climate-related risks, including droughts, floods, storms and high temperature variability. Other risks include illegal fishing, overfishing, the introduction of exotic species and siltation of the Niger River.
<i>Women/vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> Fisheries are one of the priority sectors in terms of action. Faced with the gradual depletion of fisheries resources as a result of climate change, the development of aquaculture is now part of the strategy for meeting fish consumption needs. More specific actions include the promotion of a sustainable increase in fish production; diversification of livelihoods in fishing communities; and construction of ponds for aquaculture.

7.3.18 Niger (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> ○ The rural sector constitutes the main job supplier – 87 percent of the total population are active in agriculture, cattle breeding, forestry, wildlife and fisheries. ○ National fish production is relatively low and is viewed as underexploited. Fisheries involve about 10 000 fishers.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ The country's most vulnerable sectors are agriculture, water resources, fisheries, health and wetlands. Climate related hazards in Niger include flash flooding, drought and weak river flows. ○ Extreme weather events, particularly drought, have contributed to the drying out of water reserves, thereby reducing fisheries production. Siltation caused by torrential rainfall and an increase in evaporation as a result of high temperatures, also contribute to the decline in fisheries production. These events may also affect biodiversity through species extinction and habitat deterioration.
<i>Women/vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ Main actions include controlling water pollution; developing fisheries activities; and reducing siltation.

7.3.19 Nigeria (not LDC)

Criteria	NAPA ⁸⁷	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> ○ Fishery resources are of particular significance in Nigeria because they provide a considerable amount of dietary protein and the fisheries sector is also a major source of employment and labour for a large number of Nigerians. ○ The agricultural sector (crop production, livestock and fisheries) is likely to retain its relative dominance in terms of the economy's total labour force for a long time.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ A significant rise in marine and freshwater temperatures will impact negatively on fisheries, just as saltwater intrusion would seriously damage inland fisheries in rivers, lakes and aquaculture installations. An expected rise in temperature would cause a change in the characteristics of the ocean's waters and consequently adversely affect fish habitat in the coastal zone of Nigeria. Increased ocean temperatures may affect upwelling along the Gulf of Guinea which could make the ocean waters become unsuitable for fisheries, causing a reduction in, and possible collapse of, fishing activities. ○ Subtle changes in key environmental variables, such as temperature, salinity, wind speed and direction, ocean currents, strength of upwelling, as a result of climate change, could sharply alter the abundance, distribution and availability of fish populations in the country. ○ Sea level rise is also likely to threaten the country's coastal zone and low-lying islands, which are currently plagued with floods and erosion.
<i>Women/vulnerable groups identified</i>							
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ Necessary adaptation strategies include improvements and changes in harvest, processing and storage technology; change in preferred fish species; and expansion of aquaculture. ○ The overarching goal is to make agriculture attractive as a viable business and to increase fisheries production. Nigeria has a national climate change adaptation strategy.

⁸⁷ Not a LDC.

7.3.20 São Tomé and Príncipe (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP ⁸⁸	Review 2011	Summary
<i>Importance of sector noted</i>							<ul style="list-style-type: none"> ○ Fishing is one of the most important activities in the country. It is conducted by both urban and rural people living along the coastline. ○ Fishing contributes about three percent of GDP and about 85 percent of the population's dietary protein. ○ Agriculture, livestock, fishing, industry, trade and tourism are key sectors for the country's development.
<i>Specific vulnerabilities identified (of relevance to the sector)</i>							<ul style="list-style-type: none"> ○ The fisheries sector is poorly managed, a situation that considerably limits the real contribution it makes to the national economy. ○ Some of the identified impacts and vulnerabilities relate to typhoons, fogs, floods, sea level rise and coastal erosion. Issues involve loss of lives at sea, loss of equipment, loss of infrastructure (the majority of the country's economic infrastructure is situated in the coastal area and therefore is highly vulnerable).
<i>Women/vulnerable groups identified</i>							<ul style="list-style-type: none"> ○ The most vulnerable groups include small-scale farmers and small-scale fishers and their families.
<i>Specific actions proposed to address the vulnerabilities</i>							<ul style="list-style-type: none"> ○ Proposed adaptation actions include the improvement and construction of fishing port infrastructure; delimitation of fishing areas using solar-powered signalling buoys; use of Fish Concentration Devices (FCD) and the introduction of, and training in, navigation technology.

⁸⁸ Not available/does not exist

7.3.21 Senegal (LDC)

Criteria	NAPA	NC	PRSP	UNDAF ⁸⁹	CAADP	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> With a coastline of 700 km, a coastal population estimated at six million and favourable weather, fishing has become a strategic economic sector for food security. It represents about two percent of GDP and provides 600 000 direct and indirect jobs. Its share of total exports is 32 percent.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> Coastal erosion is an ongoing problem in Senegal owing to a naturally dynamic coastal zone that forms part of a regional sediment transportation corridor. Sea level rise could intensify this natural process and damage coastal infrastructure and human settlements. Furthermore, the underperformance of Senegal's agriculture sector has resulted in the overly rapid urbanization of the Senegalese population and migration to the coastline; 60 percent of the population now lives in vulnerable coastal regions. This process has negatively affected urban planning and coastal zone management and, in turn, adversely impacted coastal resources and ecosystem services. Greater rainfall variability, along with more intense rainfall events, cause floods and droughts. Other concerns relate to increased wave heights; warming ocean waters; development of toxic agents in marine animals; changes in upwelling; loss of marine biodiversity; loss of mangroves; changes in estuarine salinity; alterations to the composition and function of ecosystems; degradation of marine ecosystems; destruction of critical habitats; pollution; overfishing; lack of knowledge about the state of resources; and conflict between artisanal and industrial fishers. Inland lakes and streams also suffer from deteriorating fish habitats and a decline in productivity. Despite its great potential, aquaculture has been stagnant in Senegal.
Women/vulnerable groups identified							<ul style="list-style-type: none"> The most vulnerable to the effects of future climate change include poor people in rural areas, women, the elderly, farmers, fishers and others. Artisanal fishing represents 75 percent of the fish production of the country and is highly vulnerable to climate risks.
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> Proposed actions include the control of flood waters from the Senegal River and the promotion of energy saving methods so as to reduce the pressure on mangroves which are harvested for wood fuel. A policy reform and revision of the legal framework for fisheries and aquaculture should take into account the need to promote responsible fisheries; create MPAs and artificial reefs; research vulnerabilities to climate change and implement corresponding adaptation actions; promote aquaculture; and strengthen regional and sub-regional cooperation.

⁸⁹ The sector is mentioned, but without specifics.

7.3.22 Sierra Leone (LDC)

Criteria	NAPA	NC	PRSP	UNDAF	CAADP	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> o Fish is the largest single source of animal protein in the country, accounting for about 75 percent of total animal protein intake. Agriculture, which includes livestock farming and fishing, is the largest employer in the country (75 percent of the population) and the greatest contributor to GDP (45 percent). o Fisheries contribute about 9.4 percent to GDP and but the sector was badly affected by the civil war, which resulted in people along the coastline becoming among the poorest in the country.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> o Sierra Leone is highly vulnerable to sea level rise because of its low-lying coastal areas. Some of these areas are already being lost to the sea. The impacts of rising sea levels on the coastal zone will include shoreline recession; increased flood frequency; inundation of coastal lands and wetlands; and the salinization of surface waters and ground-waters. These impacts will, in turn, affect coastal habitats and biodiversity. o Ocean warming will modify ocean currents, with possible impacts on coastal fisheries. o During prolonged dry seasons, many ponds and inland waters dry out, leading to reduced fish populations. Those that survive the dry periods are threatened by pollution (pesticide run-offs and other discharges). o Increases in the salinity of both surface and ground water within the coastal zone will impact aquaculture which is a significant industry within Sierra Leone's coastal area. o Current climate events, including flash floods and cyclones, could become more frequent and affect safety at sea.
Women/vulnerable groups identified							<ul style="list-style-type: none"> o Women and children are the most vulnerable owing to the remoteness of some areas. For example coastal and farming villages are usually characterized by high rates of illiteracy, which makes information dissemination a difficult task.
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> o The key adaptation needs of Sierra Leone are centred on agriculture, forestry, fisheries, water resources (hydrology), meteorology, coastal zones and health. o Actions include discouraging irresponsible fishing practices such as poisoning, use of explosives and inappropriate fishing gear; livelihood diversification; improvements in fisheries legislation; and strengthening fisheries management policies and institutions. o Measures should be taken to safeguard spawning sites; stop the destruction of mangroves (fish nursery areas); address pollution along the coastline and the riverbanks; identify and delineate vulnerable fishery habitats; promote aquaculture and inland fisheries development; enforce fishing control measures; and modify and strengthen fisheries management policies and institutions.

7.3.23 Togo (LDC)

Criteria	NAPA	NC	PRSP	UNDAF ⁹⁰	CAADP	Review 2011	Summary
Importance of sector noted							<ul style="list-style-type: none"> ○ Fisheries production is relatively low and is derived primarily from marine fisheries. ○ Fish farming remains marginal, despite the potential benefits and opportunities offered in this area.
Specific vulnerabilities identified (of relevance to the sector)							<ul style="list-style-type: none"> ○ The main climate risks identified in Togo are sea level rise, flooding, drought and coastal erosion, with drought and flooding being the most serious threats. ○ Development within Togo is hampered by environmental degradation, including diminishing forest cover, siltation of rivers and lakes and reduced fisheries productivity. ○ With regard to inland fisheries and aquaculture, increases in temperature cause evaporation and drying, resulting in disruptions to the productive cycles of fish and also the death of fry. ○ Increases in ocean temperature may cause the migration of some fish species, alterations in the depth at which certain species are caught and a decrease in the volume of pelagic resources. ○ Sea level rise will result in a permanent intrusion of salt water into rivers, ponds and other freshwater bodies. During inland flooding the opposite may happen, with freshwater flowing into the sea and creating a brackish environment.
Women/vulnerable groups identified							<ul style="list-style-type: none"> ○ Fishers along the coast are the most vulnerable group in the region because of the negative effects of coastal erosion. This is aggravated by the extraction of gravel beach rock.
Specific actions proposed to address the vulnerabilities							<ul style="list-style-type: none"> ○ Develop: capacity to obtain and assess agro-meteorological information; early warning systems to reduce vulnerability to extreme weather events (particularly droughts and floods); and community-based, integrated fish and poultry farming systems. ○ Protect the Togolese coast against sea erosion, for instance by restoring degraded mangrove areas.

⁹⁰ The sector is mentioned, but without specifics.

7.4 Stakeholders and organizations consulted

Regional Economic Communities

1. Commission de la Communauté Economique et Monétaire de l'Afrique Centrale (CEMAC)
2. Economic Community of Central African States (ECCAS); linked to this is the Regional Fisheries Commission for Gulf of Guinea (COREP) – the fisheries arm of ECCAS.
3. Economic Community of West African States (ECOWAS)

Regional Fisheries Bodies, Regional Fisheries Organizations and Lake/Basin Commissions

4. Canary Current Large Marine Ecosystem (CCLME) project
5. Committee for the West Central Gulf of Guinea (FCWC)
6. Economic Commission on Cattle, Meat and Fish resources (CEBEVIRHA)
7. Fishery Committee for the Eastern Central Atlantic (CECAF)
8. Guinea Current Large Marine Ecosystem (GCLME) project
9. Lake Chad Basin Commission (LCBC)
10. Manu River Union (MRU)
11. Sub-regional Fisheries Commission (SRFC)

Other key organizations, projects and donors

12. ACP Fish II project
13. Adaptation Fund
14. African Confederation of Small-scale Fishermen Organization (Confédération africaine des Organisations Professionnelles de Pêche Artisanale) (CAOPA)
15. African Development Bank – project on Improving Statistics for Food Security, Sustainable Agriculture and Rural Development
16. African Development Bank– ClimDev – Africa Special Fund
17. Aquaculture Network for Africa (ANAF)
18. Clean Technology Fund and the Strategic Climate Fund– Climate Investment Funds
19. Committee on Inland Fisheries and Aquaculture in Africa (CIFAA)
20. Danish International Development Agency (DANIDA)
21. EAF Nansen project
22. EC– Global Climate Alliance
23. FAO TCP projects on aquaculture development
24. FishCode-STF project and Fishery Resources Monitoring System (FIRMS)
25. GEF– Least Developed Countries Fund (LDCF); Special Climate Change Fund (SCCF); Trust Fund
26. Govt. of France– French Fund for the Global Environment
27. Govt. of Germany– International climate Initiative
28. Govt. of Japan– Hatoyama Initiative
29. Inter-American Development Bank– Sustainable Energy and Climate change Initiative
30. International Collective in Support of Fishworkers (ICSF)
31. International Development Association
32. International Development Research Centre (IDRC)
33. International Fund for Agricultural Development (IFAD)
34. Japan Cool Earth Partnership
35. Japan International Cooperation Agency (JICA)
36. Norwegian Agency for Development Cooperation (NORAD)
37. Swedish International Development Cooperation Agency (SIDA)
38. UK Government Department for International Development (DFID)
39. UN Office for Project Services (UNOPS)
40. UNDP African Adaptation Programme– MDG Achievement Fund
41. United Nations Framework Convention on Climate change (UNFCCC)
42. United Nations International Strategy for Disaster Reduction (UNISDR)
43. United States Agency for International Development (USAID)
44. West Africa Regional Fisheries Programme (WARFP)
45. West African Network for fisheries Policies (REPAO)
46. World Bank– Congo Basin Forest Fund; Global facility for Disaster Reduction and Recovery; Pilot Programme for Climate Resilience; Strategic Climate Fund
47. World Wide Fund for Nature (WWF)
48. WorldFish Center

7.5 Survey questionnaire

Mapping of fisheries and aquaculture related climate change adaptation

On behalf of the NEPAD-FAO Fish Programme (NFFP), NFDS Africa is undertaking a study to identify key players, gaps and areas for further support with regard to climate change adaptation (CCA) and disaster risk management (DRM) in fisheries/aquaculture in Western/Central and Southern/Eastern Africa. Subsequently, regional workshops will be held to discuss the findings of this study.

The purpose of this questionnaire is to map out past/current/planned/potential future initiatives in relation CCA and DRM in fisheries/aquaculture in Western/Central and Southern/Eastern Africa. Your contribution is greatly appreciated.

*1. Please tell us your:

Name:

Position:

Email address:

Organisation/programme/project/initiative:

*2a. Is your organisation/programme/project/initiative engaged in any activity (previously/currently/in the future) related to CCA/DRM in fisheries or aquaculture?

☐ Yes

☐ No

*2b. Please describe this activity:

*2c. Please describe the risks/impacts that this activity is addressing (cyclones, food insecurity, sea level rise, etc.).

*2d. What is the time frame of this activity?

☐ 0-6 months

☐ 6-12 months

☐ 1-2 years

☐ 2-3 years

☐ 3-4 years

☐ Longer

Mapping of fisheries and aquaculture related climate change adaptation

***2e. Which is the lead organisation? Please specify with name, contact details and information on relevant capacity.**

***2f. Which partners are involved?**

- ☐ None
- ☐ UN
- ☐ Regional Economic Community
- ☐ Regional Fisheries Body
- ☐ Non-governmental or civil society organisation
- ☐ Government
- ☐ Other

Please specify:

***2g. At what level is this activity being carried out?**

- ☐ Regional
- ☐ National
- ☐ Local
- ☐ Community
- ☐ Other

Please specify:

Mapping of fisheries and aquaculture related climate change adaptation

***2h. Are there any synergies/linkages between this activity and the Comprehensive Africa Agriculture Development Programme (CAADP) national compacts?**

☐ Yes

☐ No

Please specify:

***2i. Are there any synergies/linkages between this activity and the National Communications or National Adaptation Programmes of Action (NAPAs) for climate change?**

☐ Yes

☐ No

Please specify:

***2j. Are there any synergies/linkages between this activity and the national or regional disaster risk management frameworks?**

☐ Yes

☐ No

Please specify:

***2k. Are there any other programmes/projects/initiatives you are involved in that relate to CCA/DRM in fisheries or aquaculture (Or vice versa)?**

☐ Yes

☐ No

Mapping of fisheries and aquaculture related climate change adaptation

***2j. Are there any synergies/linkages between this activity and the national or regional disaster risk management frameworks?**

☐ Yes

☐ No

Please specify:



***2k. Are there any other programmes/projects/initiatives you are involved in that relate to CCA/DRM in fisheries or aquaculture (Or vice versa)?**

☐ Yes

☐ No

If you are involved in more CCA/DRM related organisations/programme/initiatives we will be in touch with you.

***3. Would your organisation/programme/project/initiative benefit from support or assistance in CCA and/or DRM in fisheries or aquaculture activities (or vice versa: fisheries and aquaculture support in CCA or DRM activities)? Please specify:**



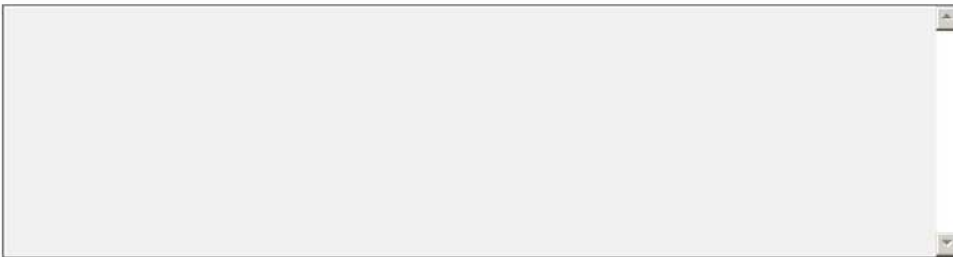
Mapping of fisheries and aquaculture related climate change adaptation

***4a. Are there any other emerging initiatives that may be of relevance to this questionnaire (i.e in relation to climate change adaptation or disaster risk management in fisheries, aquaculture or other related areas)?**

☐ Yes

☐ No

Please specify:

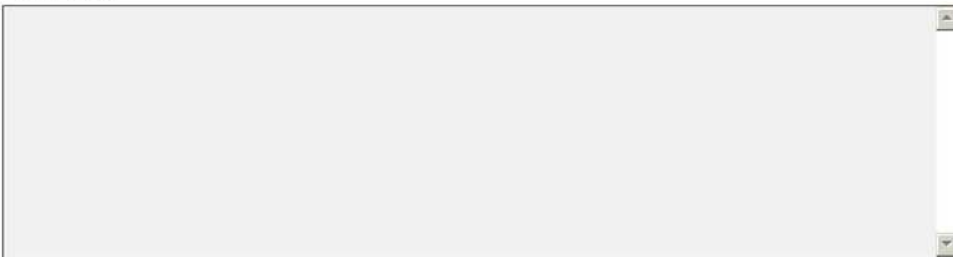


4b. Are you familiar with any national or regional climate change/disaster risk management strategies or institutional frameworks in your region?

☐ Yes

☐ No

Please specify:



7.6 Documents consulted

Information was gathered from the following documents for the mapping of interventions and projects/programmes.

1. ACP Secretariat. 2010. Desk study on main donors support to the fisheries and aquaculture sector in ACP countries. ACP Ambassadorial Working Group on Fisheries. Brussels, Belgium. ACP Secretariat, Centre for Development of Enterprise, Technical Centre for Agricultural and Rural Co-operation. 91pp.
2. African LME Caucus. 2011. LME News – the newsletter of the African LME Caucus. Issue 1, August 2011. Available at: <http://iwlearn.net/news/AfricanLMENewsletterAugust2011.pdf>
3. Badjeck, M.C., Katikiro, R.E., Flitner, M., Diop, N. & Schwerdtner, M.K. 2011. Envisioning 2050: climate change, aquaculture and fisheries in West Africa. Dakar, Senegal, 14-16 April 2010. Penang, Malaysia. The WorldFish Centre. Workshop report 2125. 28pp.
4. Branca G., Tennigkeit T., Mann W. & Lipper L. 2012. Identifying opportunities for climate-smart agriculture investments in Africa. Rome, FAO.
5. CCLME project. 2012. Preliminary Transboundary Diagnostic Analysis. Dakar, Senegal. Canary Current Large Marine Ecosystem Project Regional Coordination Unit.
6. CIGI. 2010. Africa's Climate Change Reality: the African Initiative Congress on climate change. The Centre for International Governance Innovation (CIGI).
7. Climate and Development Knowledge Network. 2012. Managing climate extremes and disasters in Africa. Lessons from the SREX report. CDKN.
8. Cochrane, K., De Young, C., Soto, D. & Bahri, T., eds. 2009. Climate change implications for fisheries and aquaculture: overview of current scientific knowledge. FAO Fisheries and Aquaculture Technical Paper. No. 530. Rome, FAO. 212pp.
9. Comprehensive Framework of African Climate Change Programmes. 2010. African Ministerial Conference on Environment (AMCEN) Secretariat.
10. De Young, C., Sheridan, S., Davies, S. & Hjort, A. 2012. Climate change – implications for fishing communities in the Lake Chad basin – what have we learned and what can we do better? FAO/Lake Chad Basin Commission Workshop 18-20 November, 2011. N'Djamena, Chad. FAO Fisheries and Aquaculture Proceedings 25. Rome, FAO. 96pp.
11. Disaster Risk Management Programs for Priority Countries. 2011. United Nations International Strategy for Disaster Reduction. World Bank.
12. ECOWAS. 2006. Economic Community of West African States (ECOWAS) Policy for Disaster Risk Reduction. Abuja, Nigeria. ECOWAS Commission, Humanitarian Affairs Department.
13. ECOWAS. 2008. Environmental Policy. Abuja, Nigeria. ECOWAS Commission, Environmental Directorate.
14. Effective measures to build resilience in Africa to adapt to climate change. 2011. Briefing Note 4. United Nations International Strategy for Disaster Reduction.
15. FAO. 2008. Report of the FAO Expert Workshop on Climate Change Implications for Fisheries and Aquaculture. Rome, Italy, 7–9 April 2008. *FAO Fisheries Report*. No. 870. Rome, FAO. 32pp.
16. FAO. 2009. Indicative list of FAO projects in West Africa. Available at <http://www.cofish.org/projects/>
17. FAO. 2012. Disaster Risk Management Strategy in West Africa and the Sahel (2011–2013). Reviewed strategic framework and the outline of the medium term plan 2014–2017. Rome, FAO.
18. FAO. 2011. Fisheries and Aquaculture Department strategy for disaster risk management and climate change adaption in Africa. Draft report. Rome, FAO. 16pp.

19. FAO. 2011. Resilient livelihoods – disaster risk reduction for food and nutrition security, an FAO Framework Programme. Rome, FAO. 55pp.
20. FCWC. 2011. FCWC Strategic Plan Implementation Programme 2011–2020. Fisheries Committee for the West Central Gulf of Guinea.
21. FAO. 2011. Report of the Africa Regional Consultative Meeting on Securing Sustainable Small-scale Fisheries: bringing together responsible fisheries and social development, Maputo, Mozambique, 12–14 October 2010. No. 963. Rome, FAO. 2011. 68p.
22. FAO. 2013. Support for sustainable climate change adaptation in marine artisanal fisheries communities in West Africa. Project Document. Rome, FAO.
23. Goulden, M., Conway, D. & Persechino, A. 2009. Adaptation to climate change in international river basins in Africa: a review. *Hydrological Sciences Journal*, 54, (5), 805-828.
24. Holvoet, K. & Ovie, S. 2012. Fisheries and HIV/AIDS in Africa. Mission report. Nigeria, Abuja 27 May – 2 June 2012. Rome, FAO. 16pp.
25. Huelsenbeck, M. 2012. Ocean-based food security threatened in a high CO₂ world: a ranking of nations' vulnerability to climate change and ocean acidification. Washington, USA. Oceana.
26. Hyogo Framework for Action 2005 to 2015. Building resilience of nations and communities to disasters (2010 – 2011). United Nations International Strategy for Disaster Reduction.
27. IOC. 2012. Acclimate: Adaptation au changement climatique. Un projet de la commission de L'Océan Indien 2008–2012.
28. Institute of Development Studies for AfricaAdapt. 2011. New voices, different perspectives: proceedings of the AfricaAdapt Climate Change Symposium 2011. 118pp.
29. NEPAD. 2003. NEPAD Action Plan for the Environment Initiative. Midrand, South Africa. New Partnership for African Development.
30. NEPAD and UNISDR. 2004. Africa Regional Strategy for Disaster Reduction. 2004. Available at <http://www.unisdr.org/we/inform/publications/4038>.
31. Niang, I. 2007. Institutional framework in relation to climate change in West and Central Africa. Climate Change Adaptation in Africa Programme, July 2007.
32. Niang, I., Nai, G., Folorunsho, R., Diop, M., Sow, M., Trawally, D., Faye, S., Bihibindi, A., Diop, N. & Karibuhoye, C. 2012. A guide on adaptation options for local decision-makers: guidance for decision making to cope with coastal changes in West Africa. Senegal. UNESCO / IOC. 54pp.
33. PaCFA. 2011. Strategic framework for fisheries, aquaculture and climate change: a proposal by the Global Partnership Climate Change, Fisheries and Aquaculture (PaCFA). Available at ftp://ftp.fao.org/FI/brochure/climate_change/pacfa/pacfa.pdf.
34. Programme d'actions de secretariat executive de la CEMAC exercice. 2006. Communauté Economique et Monétaire de l'Afrique Centrale, 14^{ème} session ordinaire du Conseil des Ministres.
35. CCLME. 2009. Protection of the Canary Current Large Marine Ecosystem. FAO/Global Environment Facility Project Document.
36. Rapport d'activités de secretariat executive exercice. 2005. Communauté Economique et Monétaire de l'Afrique Centrale, 14^{ème} session ordinaire du Conseil des Ministres.
37. ECOWAP. 2005. Regional Agricultural Policy for West Africa. ECOWAS agricultural policy. Abuja, Nigeria. ECOWAS Commission.
38. Regional Partnership Compact for the Implementation of ECOWAP CAADP. Abuja, Nigeria. ECOWAS Commission.
39. Regional Partnership for the Implementation of Regional Agricultural Policy for West Africa (ECOWAP) CAADP.

40. REPAO. Undated. Summary of the strategic compass on fishery policies in West Africa. Draft report. Dakar, Senegal. REPAO Network on Fishery Policies in West Africa. 21pp.
41. GCLME. 2005. Report of the Transboundary Diagnostic Analysis (TDA) and indicators workshop. Accra, Ghana. Interim Guinea Current Commission Executive Secretariat.
42. GCLME. 2008. Strategic Action Programme. Accra, Ghana. Interim Guinea Current Commission Executive Secretariat.
43. SADC. 2003. SADC Protocol on Fisheries. Gaborone, Botswana. SADC Secretariat.
44. Strategic Partnership for Sustainable Fisheries Investment Fund (SPFIF). African Union Inter-African Bureau for Animal Resources (AU– IBAR).
45. Summary and conclusions of mid-term review workshop: second Ministerial Conference on Disaster Risk Reduction in Africa, Nairobi, Kenya, 2010.
46. The future we want. 2012. United Nations Conference on Sustainable Development. Rio De Janeiro, Brazil.
47. Thornton P. & Cramer, L., eds. 2012. Impacts of climate change on the agricultural and aquatic systems and natural resources within the CGIAR's mandate. CCAFS Working Paper 23. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available at www.ccafs.cgiar.org
48. UNDP. 2010. Designing climate change adaptations initiatives. A UNDP toolkit for practitioners. New York, United States. UNDP Bureau for Development Policy.
49. United Nations International Strategy for Disaster Reduction Regional Office for Africa. 2011. Disaster reduction in Africa. *ISDR Informs*, 2010 – 2011 issue. Available at http://reliefweb.int/sites/reliefweb.int/files/resources/23130_unisdrafricainforms2010midissue2011.pdf
50. UNISDR. 2011. Strengthening climate change adaptation through effective disaster risk reduction. Briefing Note 3. United Nations International Strategy for Disaster Reduction.
51. Vadicchino, L., De Young, C. & Brown, D. 2011. The fisheries and aquaculture sector in national adaptation programmes of action: importance, vulnerabilities and priorities. FAO Fisheries and Aquaculture Circular. No. 1064. Rome, FAO. 60pp.
52. WEDO. Impact of climate change on women in fisheries: cases of Senegal and Ghana. Available at <http://www.wedo.org/files/HSN%20Study%20Final%20May%202020,%202008.pdf>
53. World Resources Institute (WRI), United Nations Environment Programme (UNEP), World Bank, United Nations Development Programme (UNDP). 2011. World resources 2010-2011: decision-making in a changing climate – adaptation challenges and choices. Washington DC , USA. World Resources Institute. 184pp.
54. Yonetani, M., Sousa, R., Below, R. & Zanetta, F. 2011. Displacement due to natural hazard-induced disasters. Global estimates for 2009-2010. Internal Displacement Monitoring Centre. Norwegian Refugee Council.

7.7 Regional initiatives and interventions in fisheries and aquaculture in respect to climate change and disasters

The sections below provide detail on regional fisheries and aquaculture initiatives and interventions relevant to CCA and/or DRM; and CCA and/or DRM initiatives and programmes relevant to fisheries and aquaculture. An asterisk after the details of the implementing organization indicates that the project is regional (global, pan-African or sub-Saharan) in scope, while others are sub-regional.

Project period		Priority ranking of level of engagement	
Past project		No engagement of subject area	
Current project		Some engagement of subject area	
Planned project		Core focus on subject area	

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking			
							Fisheries	Aqua	CCA	DRM
AfricaAdapt is collaboratively hosted by three African organizations: Environment and Development in the Third World (ENDA-TM); Forum for Agricultural Research in Africa (FARA); and IGAD Climate Prediction and Applications Centre (ICPAC).*	Pan African through its communications network. Also funds some specific in-country projects.	AfricaAdapt	IDRC, DFID		<p>AfricaAdapt is an independent bilingual network (French/English) focused exclusively on Africa. The Network's aim is to facilitate the flow of climate change adaptation knowledge for sustainable livelihoods between researchers, policy makers, civil society organizations and communities who are vulnerable to climate variability and change across the continent.</p> <p>The network uses the latest web-based applications, face-to-face interactions and other media for sharing resources; facilitating learning; and strengthening the African adaptation community. Online activities are complemented by a range of offline activities and services, including:</p> <ol style="list-style-type: none"> 1) an innovation fund offering small grants for new approaches to knowledge sharing; 2) radio-based programming and dialogues in local languages, developed with community radio broadcasters across the continent; 3) face-to-face meetings bringing people together to exchange ideas and overcome challenges; and 4) a CD-Rom and paper-based dissemination service for network news and resources. <p>Tanzania: The Tanzania Coastal Management Partnership (TCMP) is a joint initiative between the Tanzanian Vice President's Office through the National Environment Management Council (NEMC) in Tanzania; United States</p>	www.africa-adapt.net/				

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheries	Aqua	CCA	DRM	
					<p>Agency for International Development (USAID); and the Coastal Resources Center/University of Rhode Island (CRC/URI) in USA.</p> <p>Burkina Faso — a total of 16 automated weather stations (AWS) were procured, comprising six agro-meteorological stations and 10 hydro-meteorological stations. The new equipment will double the number of weather stations in the country, thereby strengthening the capacity of the Directorate General of Meteorology’s (DGM) weather data collection network to provide real-time weather monitoring and more efficient measuring of climatic change in Burkina Faso. http://bit.ly/TaqZl6</p> <p>Cameroon — the project aims to increase awareness and improve the capacity of Pygmies to adapt to climate change. More specifically, it will survey Pygmy perceptions on climate change, provide them with a forum for identifying the major climate changes affecting their lives and identifying adaptation options. Through these processes they will be able to articulate their expectations around the actions needed to strengthen their resilience. www.preventionweb.net/files/25671_cameroon.pdf</p> <p>Gambia — the results of the Vulnerability and Capacity Assessment will help coastal fishing communities, business owners (hoteliers) and the local municipalities to adapt to climate change. In West Africa, coastal erosion is common and affects most countries. Potential adaptation measures might be useful for future regional reports to address climate change. www.africa-adapt.net/projects/198/</p> <p>Ghana — the Integrated Coastal and Fisheries Governance (ICFG) initiative, locally known as <i>Hen Mpoano</i> (Our Coast) seeks to strengthen capacity for land and shorefront planning and decision- making at the district scale. In addition, the initiative will pilot approaches that anticipate the impacts of climate change on shorefront communities and infrastructure. www.africa-adapt.net/projects/196/</p>						

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheries	Aqua	CCA	DRM	
					<p>Liberia — the intent of the climate change Radio Advocacy “Rethinking about the Future” project is to highlight the barriers to adaptation and propose strategies for sustainable solutions; help to reduce the information gap between policy makers and the general public; and enhance public participation and engagement in climate change adoption and mitigation. The project also aims to sensitize the public on environmental protection issues.</p> <p>Senegal — To protect a stretch of beach in Saly, a protective rock wall was built just beyond the waterline. The fight against coastal erosion is one of five strategic priorities of AAP Senegal. The other four are: (i) establishing regional inter-institutional coordination mechanisms; (ii) the completion of vulnerability studies for key sectors of the national economy; (iii) climate change training, awareness raising and communication targeting key stakeholders; and (iv) providing equipment and capacity development for national structures responsible for climate change. http://bit.ly/P2jcd9</p>						
African Development Bank (AfDB); the African Union Commission (AUC); and the United Nations Economic Commission for Africa (UNECA).*	African Union member states	ClimDev — Africa Special Fund (CDSF)	African Development Bank		<p>The CDSF is a joint initiative of the African Development Bank (AfDB), the African Union Commission (AUC) and the United Nations Economic Commission for Africa (UNECA). The objective of the CDSF is to strengthen the institutional capacities of national and sub-regional bodies to formulate and implement effective climate-sensitive policies. In order to achieve this objective, the CDSF supports three main areas of interventions:</p> <ul style="list-style-type: none">1) generation and wide dissemination of reliable and high quality climate information in Africa;2) capacity enhancement of policy makers and policy support institutions to integrate climate change information into development programs; and3) implementation of pilot adaptation practices that demonstrate the value of mainstreaming climate information into development.	ClimDev—Africa Special Fund (CDSF)					
African LMEs*	Member states of African LMEs	African LME Caucus	African LMEs		<p>The aim of the LME Caucus is to:</p> <ul style="list-style-type: none">1) foster closer cooperation between African LMEs;2) provide a platform for the LME projects and inter-governmental commissions to discuss issues of	http://iwlearn.net/news/AfricanLMENewsletterAugust2011.pdf					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheries	Aqua	CCA	DRM	
					common concern, share experiences and develop strategies to work together; 3) emphasize the importance of climate change research for the management of natural resources.						
African Network for Basin Organizations*	Burkina Faso, Côte d'Ivoire, Chad and Guinea	African Network for Basin Organizations	-		Information sharing and network site for Basin organizations globally and in Africa.	www.riob.org/tag/africa-8?lang=en					
Agence inter établissements de la recherche pour le développement (Inter-institutional Research Agency for Development — AIRD)	Benin, Burkina Faso, Cape Verde, Cameroon, CAR, Chad, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Nigeria, Senegal and Togo	Ripiecsa	The Ministry of Foreign Affairs, France	2007—2011	Ripiecsa: Interdisciplinary Research and Participatory Interactions on Ecosystems, Climate and Societies in West Africa. www.aird.fr/nos-programmes/programmes-de-recherche/ripiecsa The aim was to support scientific policy responses to climate change by promoting research scientists and building the capacity of African researchers.	Review of Current and Planned Adaptation Action: Middle Africa. Alec Crawford, Hilary Hove and Jo-Ellen Parry. International Institute for Sustainable Development. 2011 www.aird.fr/					
AU-IBAR. Partners — FAO and WWF*	AU member states	Strategic Partnership for Sustainable Fisheries Investment Fund (SPFIF)	AU-IBAR	2005—2015	The overall objective of SPFIF is to promote sustainable use of fisheries resources and the management of marine ecosystems that support them, with the aim of facilitating poverty eradication and enhancing sustainable income growth of the fishing communities of Sub-Saharan Africa (SSA). To achieve the objective, the partnership ensures that country-level projects are consistent with existing international instruments for sustainable fisheries and poverty eradication, such as the FAO Code of Conduct for Responsible Fisheries and the World Summit on Sustainable Development implementation plan. The new projects should complement the existing work of LME programmes and NEPAD as part of the CAADP agenda.	Strategic Partnership for Sustainable Fisheries Investment Fund (SPFIF) Project Brochure www.spfif.org/ www.au-ibar.org					
CCLME project; FAO	Morocco, Mauritania, Cape Verde, Senegal, the Gambia, Guinea and Guinea-Bissau.	Assessing impacts, adaptation and mitigation of CC in the CCLME	GEF	In discussion	Suite of concept notes being developed by CCLME CC working group.	FAO project in pipeline					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZA TION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisher ies	Aqua	CCA	DRM	
Coalition of IUCN, WWF, Wetlands International and the Foundation Internationale du Bassin d’Arguin (FIBA), associated with the Sub-Regional Commission on Fisheries (CSRP)	Mauritania, Senegal, The Gambia, Guinea Bissau, Guinea, Sierra Leone and Cape Verde	Regional Programme for the Conservation of Coastal and Marine Protected Areas in West Africa (PRCM)	WWF, IUCN, Wetlands International and FIBA (Foundatio n Internation ale du Banc d’Arguin)	Latest phase is 2008 — 2013	The goal of the Programme is to: 1) ensure the effective, sustainable and equitable management of all critical habitats and endangered species, with a view to preserving the biological and cultural diversity of the West African coastal and marine zone; 2) develop and implement methods of integrated coastal fishery management, jointly with all relevant stakeholders; and 3) bring actors to use knowledge, tools and appropriate governance structures to implement joint processes of integrated coastal management at different levels.	Climate Change Adaptation in Africa Programme Institutional Framework In Relation to Climate Change In West and Central Africa, Dr Isabelle Niang, UCAD, Dakar, 27 July 2007 http://en.prcmarine.org/index.php?option=com_content&view=category&layout=blog&id=6&Itemid=403					
Committee for Drought Control in the Sahel (CILSS)	Burkina Faso, Cape Verde, Chad, Gambia, Guinea Bissau, Mali, Mauritania, Niger and Senegal	AGHRYMET	-		The AGRHYMET Regional Centre was established in 1974 as a specialized institute of the Permanent Interstate Committee for Drought Control in the Sahel (CILSS). It is composed of nine member states and was established as an interstate public institute with legal status and financial autonomy. The Regional Centre has international status and is based in Niamey, Niger. Its main objectives are to contribute to achieving food security and increased agricultural production in the CILSS member states and the improvement of natural resources management in the Sahelian region.	www.agrhymet.ne/eng/index.html Share www.un-spider.org/institutions-guides/agrhymet-regional-centre					
Dependent on country	Burkina Faso, Chad, Djibouti, Eritrea, Ethiopia, Ghana, Mali, Mauritania, Niger, Nigeria, Senegal, Sudan and Togo	Great Green Wall project	LDCF; SCCF; World Bank; AfDB	2010	The project will address desertification and food security through the creation of a biological corridor between participating countries. The goal is to increase investment in appropriate sustainable land and water management and technologies. In addition, the project seeks to encourage cooperation within and among participating countries and for countries to incorporate evidence-based policy development	www.preventionweb.net/files/25663_benin.pdf					
DFID-IDRC*	Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Chad, DRC, E. Guinea, Gabon, Gambia, Ghana, Guinea-Bissau, Guinea, Côte d’Ivoire, Liberia, Mali, Niger, Nigeria, Congo, São Tomé and Príncipe, Senegal and Togo	CCAA programme (Climate Change Adaptation in Africa)	DFID and IDRC	Ended March 2012	The Climate Change Adaptation in Africa (CCAA) research and capacity development program was launched in 2006 as a jointly funded initiative of IDRC and the United Kingdom’s Department for International Development (DFID). It was hosted by IDRC in Ottawa and there were three regional offices in Africa. Information on the final evaluation of the CCAA is available at:	www.idrc.ca/EN/Programs/Agriculture_and_the_Environment/Climate_Change_and_Adaptation_in_Africa/Pages/default.aspx					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZA TION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheri es	Aqua	CCA	DRM	
					<p>www.idrc.ca/EN/Regions/West_and_Central_Africa/Pages/ProjectDetails.aspx?ProjectNumber=106702</p> <p>Nigeria – strengthening the capacity of smallholder farmers to adapt to climate change through radio drama. The objective is to support the production and test a 26-episode radio drama featuring climate adaptation content. www.preventionweb.net/files/25763_nigeria.pdf</p> <p>A number of regional projects were funded through CCAA. These include, but are not limited to: APPECAO, CapaSids, Resilience and the African smallholder: Enhancing the capacities of communities.</p>						
Environment and Development Action in the Third World (ENDA) (Dakar-based organization)*	Cape Verde, Gambia, Guinea, Guinea Bissau, Mauritania and Senegal.	Adapting Fishing Policy to Climate Change in West Africa or APPECCAO	Climate Change Adaptation in Africa (CCAA), jointly funded by IDRC and DFID	Current	Aims to integrate improved understanding of climate change into fisheries planning and policy. This project builds on two existing regional structures, namely ENDA’s West African Fisheries Policy Network (REPAO) and the Sub-regional Fisheries Commission for West Africa (CSRP). Through REPAO, national research teams in Cape Verde, Guinea and Senegal are studying the likely impacts of climate change and aim to identify adaptation strategies, drawing on both scientific and local knowledge.	www.adaptationinafrica.org/adapting-fishing-policies-for-a-changing-climate-and-coastline/					
FAO	Senegal, Gambia and Sierra Leone	Support for sustainable climate change adaptation in artisanal fisheries communities in West Africa	FAO	June 2012, May 2014 – in approval process	The project will improve the adaptive capacity of the beneficiary communities to the impacts of climate change. Community specific climate change phenomena will be identified and documented in a participatory manner in three communities per participating country. Five adaptation measures found to be resilient, sustainable and appropriate to each community will be introduced and promoted to reduce their vulnerabilities to the impacts of climate change.	FAO project in pipeline					
FAO*	Angola, Benin, Cameroon, Cape Verde, Comoros, Congo, DR Congo, Côte d’Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea Bissau, Guinea, Kenya, Liberia, Madagascar, Maldives, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nigeria, São Tomé and Príncipe, Senegal, Sevchelles, Sierra Leone, Somalia,	EAF-Nansen project	NORAD		The long-term objective of the EAF-Nansen project is to strengthen regional and country specific efforts to reduce poverty and create conditions to assist in the achievement of food security. It encourages the development of sustainable fisheries management regimes through the application of the ecosystem approach to fisheries in a number of developing countries at global level, with an early emphasis on Sub-Saharan Africa.	www.eaf-nansen.org/nansen/en					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheries	Aqua	CCA	DRM	
	South Africa, Tanzania and Togo				The immediate objectives of the project are to provide the fisheries research institutions and management administrations in the participating countries with additional knowledge on their ecosystems for use in planning and monitoring, and to further the acceptance and application of the key principles of the EAF.						
FAO*	Global	Framework Programme on Disaster Risk Reduction (FP DRR)			The Framework Programme is designed to provide strategic direction for the implementation of disaster risk reduction measures in member states across the agricultural-related sectors. It is in line with the Hyogo Framework for Action and its Five Priorities for Action.	Resilient Livelihoods: Disaster Risk Reduction for food and nutrition security. An FAO Framework Programme. Sept 2011					
Fishery Committee of the West Central Gulf of Guinea (FCWC)	Benin, Côte d'Ivoire, Ghana, Nigeria, Liberia and Togo	Support for the assessment of fish stocks and the understanding of climate change			Ultimately, climate change at the level of the sub-region deserves to be better understood so that populations are prepared to adapt, and to avoid disasters. Reliable data on fisheries and a better understanding of climate change is essential for sustainable fisheries management. Improving the quality of data and information is essential for the management and conservation of fisheries resources and the preservation of the profits made from fishing activities. This project is planned and has not yet received funding.	Survey response					
GIZ and COMIFAC	Burundi, Cameroon, CAR, Chad, Congo, DRC, Equatorial Guinea, Gabon, Rwanda, São Tomé and Príncipe.	Climate change scenarios for the Congo basin	BMU (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany)	2009 – 2011	The project aimed to provide national and regional decision-makers with climate change scenarios for the Congo Basin so that they are able to adapt natural resource management strategies to accommodate climate change.	www.preventionweb.net/files/25671_cameroon.pdf					
Global Facility for Disaster Reduction and Recovery (GFDRR)	Burkina Faso, Ghana, Mali, Senegal and Togo	Community Co-Management for DRM of Marine Resources in West Africa	World Bank; GFDDR	2008– 2011	The project aimed to strengthen the capacity of coastal and seashore communities in marine and coastal resource management in the face of local risk factors, climate change impacts and the overexploitation of marine resources. It included a component for the management of the fisheries resources of Lake Volta; the development of Integrated Coastal Zone Management; the construction of sea dykes; the creation and enhancing of river dykes to protect ports and	http://sdwebx.worldbank.org/climateportal/bdoc/GFDRRCountryProfiles/wb_gfdr climate_change_country_profile_for_GHA.pdf Disaster Risk					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZA TION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheri es	Aqua	CCA	DRM	
					harbours; beach nourishment; coastal mangrove protection (ecosystem-based adaptation) and management.	Management Programs for Priority Countries. Global Facility for Disaster Reduction and Recovery. 2011					
Global network of civil society organization. Initiated with support of UNISDR.	Global network – facilitates lesson learning and discussion via the website	Global Network of Civil society organizations for disaster Risk Reduction	Currently hosted by NGO Tearfund	Phase two (2012–2015)	The Global Platform for Disaster Reduction was established by UNISDR in 2007 as a biennial forum for continued and concerted emphasis on disaster reduction, providing strategic guidance and coherence for implementing the Hyogo Framework, and for sharing experiences and expertise among all its stakeholders. The Global Platform is now the world's foremost gathering of stakeholders committed to reducing disaster risk and building the resilience of communities and nations. For the GNDR, this offers an important opportunity to learn and also share views of members working at the frontline of disasters as to what is working, and what needs to improve if risk reduction work is to be successful. GNDR has now entered phase two, which is to grow the current network of global members.	http://www.globalnetw ork-dr.org/					
Great Lakes Centre for Culture, peace and Development*	Burundi, Democratic Republic of Congo, Rwanda and Tanzania	Great Lakes Centre for Culture, peace and Development	-		Training farmers on climate change adaptation and poverty reduction across trade boundaries in Central Africa. To promote peace, strength capacity building of local community, civil participation in governance, human rights, unity and reconciliation and sustainable development in the Great Lakes region of Africa.	Survey response					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheries	Aqua	CCA	DRM	
Implemented collaboratively by West African and German partners	Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Mali, Niger, Nigeria, Senegal and Togo	West African Science Service Centre on Climate change and Adapted Land Use (WASCAL)	Germany – Federal Ministry of Education and Research		<p>WASCAL is a large-scale research-focused programme designed to tackle climate change and adapted land use and thereby enhance the resilience of human and environmental systems to climate change and increased variability. It does so by strengthening the climate change research infrastructure and capacity in West Africa and by pooling the expertise of ten West African countries and Germany.</p> <p>The Competence Centre, a newly established institute in West Africa, carries out research and provides science-based advice to policymakers and stakeholders on climate change impacts, mitigation, and adaptation measures. The Core Research Program complements the scientific activities of the Competence Centre, and is implemented by a network of German and West African research institutes. The Graduate Research Program, involving the creation of seven graduate schools in West Africa, will contribute to the education of the next generation of African scientists and policy makers in the field of climate change and land management.</p> <p>Benin – Programme Development Support Participatory Artisanal Fisheries (PADPPA) is a response to the problems of overfishing that led to the decline of the purchasing power of fishers operating in the waters of southern Benin. Its sectoral objective is the fight against poverty and improving living conditions of people living mainly from fishing, the households in the poorest fishers and with special attention to women.</p> <p>Burkina Faso – projects include (i) Developing an early warning system; (ii) formulating a national communication on climate change; (iii) Studying climate change impacts and adaptation possibilities in the agricultural and water sector; and (iv) studying examples of successful adaptation in the Volta Basin.</p> <p>Côte d'Ivoire – various agricultural projects, none relevant to fisheries.</p> <p>Gambia – no current projects.</p>	www.wascal.org/					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheries	Aqua	CCA	DRM	
					<p>Ghana – no information on projects.</p> <p>Mali – studies conducted by the project include (i) Project-NCAP Netherlands (four studies); (ii) Pilot Central Delta of the Niger River in Mali, which is a component of the project “Support for coping with climate change in the Sahel of AGRHYMET/CILSS”; (iii) Sequestration of carbon in the Koulikoro region; (iv) the ERC-ILRI collaborative project funded by the BMZ, being in the region of Mopti on the coping strategies of agro climate change;(v) “Enhancing food security in Mali in the face of change and climate variability”, funded by FAO during formulation; (vi) Impact of climate variability on water resources forecasting system flooding the central delta of the Niger in Mali and local development; (vii) Improving livelihoods and natural resource management for food security in the Sahel (Convention IER / CILSS).</p> <p>Niger – no information on projects.</p> <p>Nigeria – No information on projects.</p> <p>Senegal – participatory platform of information for Vulnerable Communities Adapt to Climate Change (InfoClim).</p> <p>Togo – research programs include (i) frequency analysis of rainfall (timing of sowing dates); (ii) control of soil water (development of conservation practices for soil water) coastal Erosion; (iii) degraded ecosystems and biodiversity; (iv) agroforestry and soil fertility; (v) pollution of soil; and (vi) breeding for the development of extra early varieties.</p>						
Implemented through universities in participating countries. *	Ghana, Senegal and other West African countries	Periperi U	USAid	2006 – ongoing	<p>Periperi U is a platform for university partnership to reduce disaster risks in Africa. It stands for “Partners Enhancing Resilience to People Exposed to Risks” – with a special focus on advancing university action on risk and vulnerability reduction in Africa. Aims:</p> <p>1) develop active teaching and training, research and policy advocacy capacity in Africa on disaster risk and vulnerability reduction;</p> <p>2) build capacity to provide at least 2 to 4 short courses annually in disaster risk management, vulnerability reduction, food/livelihood security or</p>	http://riskreductionafrica.org/en/rra-ddr-per/rra-whatisperiperi					

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					subjects relevant to risk and vulnerability reduction in their country; 3) develop either undergraduate and/or graduate programmes related to reducing or managing the risk and vulnerabilities in relevant countries; and 4) generate applied research outputs related to risks and vulnerabilities that increase local understanding and improve the risk management.						
Institute of Aquaculture, Stirling University*	All of sub-Saharan Africa	Sustainable Aquaculture Research Networks in Sub-Saharan Africa (SARNISSA) – A new era for strengthening African Aquaculture	World Fish Centre		SARNISSA is an online discussion forum and acts as a means of developing dialogue from the now over 2 000 registered members comprising a wide range of stakeholder from policy level to small-scale producers, NGOs, academic, markets, IGOs, etc.	Survey response www.sarnissa.org/tiki-index.php					
Instution De Engenharia Mecanica	Cape Verde and São Tomé and Príncipe	CapaSIDS: Capacity Building and Knowledge on Sustainable Responses to Climate Change in Small Island states.	DFID and IDRC through the CCAA programme	2009 – 2012	This project aimed to enable municipal governments in SIDS to incorporate climate change adaptation into their long-term planning and decision-making. Researchers facilitated participatory scenario development and analysis in two municipalities: São Vicente in Cape Verde and São Tomé in São Tomé and Príncipe. Geographical information system tools were used to help stakeholders visualize the impacts of socioeconomic and climate change scenarios and to appraise a number of adaptation options.	www.preventionweb.net/files/25672_capeverde .pdf					
INSU, NERC, EC, ACMAD, ASECNA, CILSS, CERMES	Benin, Burkina Faso, Cape Verde, Cameroon, Chad, Congo, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Ivory Coast, Mali, Niger, Nigeria, Senegal and Togo	AMMA – African Monsoon and Multidisciplinary Analyses	-		The goals of AMMA are to: 1) improve understanding of the West African monsoon and its influence on the physical, chemical and biological environment, regionally and globally; 2) provide the underpinning science that relates variability of the WAM to issues of health, water resources, food security and demography for West African nations and defining and implementing relevant monitoring and prediction strategies; and 3) to ensure that the multidisciplinary research carried out in AMMA is effectively integrated with prediction and decision making activity.	www.amma-international.org/spip.php?rubrique55					

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IOC – UNESCO	Cape Verde, Gambia, Guinea Bissau, Mauritania and Senegal	Adaptation to Climate Change- Responding to Shoreline Change and its Human Dimensions in West Africa Through Integrated Coastal Area Management	GEF – LDCF		The overall objective of the full project is to mainstream climate change adaptation into the Integrated Coastal Area Management (ICAM) planning of the participating countries.	www.thegef.org/gef/pro ject_detail?projID=2614					
Kanuri Development Association	Niger, Nigeria, Chad and Cameroon Activity carried out in the rural areas/settlements around the Lake Chad shore	Kanuri Development Association	Two private funders: Alhaji Bashir Umar and Hajja Zara.		Teaching impacts of climate change in Kanuri local dialect for quick adaptation. Specifically focusing on why Lake Chad is receding, the future of the lake and associated possible future crises. Such crises include disputes between fishers and farmers invading the lake shores as a result of the shrinking of the lake. At times, the lake dries out for two years and then, in the third year, major flooding occurs as a result of an increase in rainfall caused by climate change.	Survey response www.gefngo.org/formm aster.cfm?&menuid=40 &action=view&orgid=74 6&preaction=main www.un- ngl.s.org/spip.php?page= article_s&id_article=250 2 www.glogov.org/images /doc/lake_chad.pdf					
LCBC	Cameroon, Niger, Nigeria, CAR and Chad	PRODEBALT Sustainable conservation of Lake Chad	ADB (ADF), GTZ, BRG, EU, WB, IDB	Ongoing 2009 – 2015	Restoring the productive capacity of the Lake Chad ecosystem through: 1) protection of the lake and its watershed – to rehabilitate and maintain the long-term productive capacity of the Lake and its watershed ecosystems; 2) adaptation of production systems to reduce the socioeconomic impacts of climate change and develop sustainable production systems through the extension of a monitoring network. This would include sustainable management of fisheries; 3) improving institutional support through building the skills of stakeholders – development of a master plan to deal with erosion and siltation; and	Climate change - implications for fishing communities in the Lake Chad Basin What have we learned and what can we do better? FAO/Lake Chad Basin Commission Workshop 18– 20 November 2011 N'Djamena, Chad www.lakechadbc.org/					

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					4) project management encompassing regional coordination in the LCBC and five national coordinators supported by the LCBC and technical services in member states.						
LCBC, FAO	Cameroon, CAR, Chad, Niger and Nigeria		Governmen t of Japan through FAO		Regional study on identification and reduction of climate change vulnerability in the fisheries of the Lake Chad Basin, followed by a regional workshop to validate and identify risks and priorities for actions (held in November 2011).	FAO/Lake Chad Basin Commission Workshop 18-20 November 2011 N'Djamena, Chad www.fao.org/docrep/017/i3037e/i3037e.pdf					
National governments	Senegal and Mali	Global Climate Change Alliance	EC; Czech Republic; Sweden; 10 th EDF	2008 – ongoing	The Global Climate Change Alliance seeks to deepen the policy dialogue between the EU and developing countries on climate change; and to increase support for target countries to implement priority adaptation and mitigation measures, and integrate climate change into their development strategies. The programme’s five priority areas are: improving the knowledge base of developing countries to the effects of climate change; promoting disaster risk reduction; mainstreaming climate change into poverty reduction development strategies; reducing emissions from deforestation and degradation; and enhancing participation in the Clean Development Mechanism.	www.preventionweb.net/files/25779_senegal.pdf					
Niger Basin Authority	Burkina Faso, Benin, Côte d’Ivoire, Guinea, Mali, Niger, Nigeria, Cameroon and Chad	Water Charter of the Niger Basin adopted by the 8th Summit of Head of States and Government in April 2008.		2008 – 2027	Between 2008 and 2027, a total of 639 projects are earmarked for member states. The projects are designed for “the development of infrastructure for water storage, conservation and utilization for agriculture; hydropower; fisheries and well as agro-forestry; silting; erosion control; poverty eradication and socioeconomic development of the populations of the basin.	Climate Change Adaptation in Africa Programme Institutional Framework in Relation to Climate Change in West and Central Africa Dr Isabelle Niang, UCAD, Dakar, 27 July 2007 http://westafricainsight.org/articles/PDF/103 www.bafg.de/nn_300054/GRDC/EN/02__Service s/07__ Collaboration/riverBasinAuth/nba.html					

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Organization for the Development of the Senegal River Basin (OMVS)	Mauritania, Senegal, Mali and Guinea	-	-	Current	Goals are to achieve food self-sufficiency for the people of the basin; to secure and improve the revenue of the people of the valley; to preserve the balance of the ecosystems in the sub-region and especially in the basin; to reduce the vulnerability of the economies of the member states of the Organization to climate risks and external factors; and finally, to boost the economic development of the member states.	Climate Change Adaptation in Africa Programme Institutional Framework in Relation to Climate Change in West and Central Africa. Dr Isabelle Niang, UCAD Dakar, 27 July 2007					
PaCFA The Task Force is under the leadership of FAO with participation from UNEP, IOC, UNDP, CBD and the World Bank.*	Global	Global Partnership Climate Change, Fisheries and Aquaculture (PaCFA)	World Bank		The goal of PaCFA is to support the process of the United Nations Framework Convention on Climate Change (UNFCCC) in response to the need for concerted action on fisheries, aquaculture and climate change. It lays the groundwork for a coordinated response from the fisheries and aquaculture sector to climate change, notably through a strategic approach to maintain or enhance the health and resilience of global oceans and waters, and strengthening the capacity of dependent people and communities. PaCFA is a UN Oceans global task force.	www.climatefish.org/					
SIDA	Niger Delta	Rehabilitation of degraded ecosystems in the “Niger Interior Delta” (REDDIN)	SIDA		Improved and integrated management of natural resources in the Delta is the objective of this project. Almost all economic activities (agriculture, livestock, fishing, gathering, river transport, and energy production) revolve around these natural resources. The Delta ecosystem is the largest reservoir of biological diversity in Mali and is a Ramsar and World Heritage site. Its fauna consists of over 130 species of fish living next to aquatic mammals and reptiles. However, over the last 30 years, both the flora and fauna are in perpetual state of degradation owing to the effects of drought caused by climate change and the pressure exerted by human beings through timber harvesting, overgrazing, overfishing and poaching.	www.worldagroforestry.org/downloads/publications/PDFs/WP17336.PDF Disaster Risk Management Programs for Priority Countries. Global Facility for Disaster Reduction and Recovery. 2011					
The Network is coordinated by the ANAF Regional Centre located in Uganda with the support of the CIFAA Secretariat in Accra and the technical cooperation of FAO-FIRA. All member	Various contributors and participants from all across Africa. National centers exist in: Cameroon, Ghana, Nigeria, Senegal and Mali	Aquaculture Network for Africa	-		The Aquaculture Network for Africa (ANAF) is a regional aquaculture information system consisting of a website that: 1) facilitates the exchange of information between the ANAF member countries; 2) assists the private and public sectors to gain quick and easy access to information required for decision-making, both on specific technical matters and for the design and assessment of new aquaculture projects; and	www.anafaquaculture.org/index.php?id=about_us0					

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countries have an assigned National Coordinator *					3) responds to increasing public demand for up-to-date information concerning aquaculture at national and regional level.						
UNDP	Gambia, Niger and Togo	Capacity Development for Policy Makers: Addressing climate change in key sectors	Governments of Norway, Finland, and Switzerland , UNDP, and the United Nations Foundation		The project was a targeted capacity development initiative that supported two goals: 1) to increase national capacity to coordinate ministerial views for more effective participation in the UNFCCC process; and 2) to assess investment and financial flows to address climate change for selected key sectors. As a result of this project, both the technical understanding of key climate change issues and their economic and policy implications within the context of the Convention will be enhanced.	www.undp.org/content/undp/en/home/ourwork/environmentandenergy/strategic_themes/climate_change/focus_areas/capacity_developmentandtheunfcccprocess/capacity_developmentforpolicymakerstoaddressclimatechange.html www.undpcc.org/en/					
UNDP	Liberia, Niger and Togo	Capacity Development for Policy Makers: Addressing climate change in key sectors	Governments of Norway, Finland, and Switzerland , UNDP, and the United Nations Foundation	2008 – 2010	The project was a targeted capacity development initiative that supported two goals: 1) to increase national capacity to coordinate ministerial views for more effective participation in the UNFCCC process; and 2) to assess investment and financial flows to address climate change for selected key sectors. As a result of this project, both the technical understanding of key climate change issues and their economic and policy implications within the context of the Convention will be enhanced.	www.preventionweb.net/files/25716_liberia.pdf					
UNDP	Morocco, Namibia and Niger	Community-based adaptation (CBA) programme	GEF (strategic priority on adaptation) co-financing	2009 – 2011	The objective of the programme was to enhance the capacity of communities in the pilot countries to adapt to climate change, including variability. Planned outcomes were: 1) enhanced adaptive capacity allowing communities to reduce their vulnerability to adverse impacts of future climate hazards; 2) national policies and programmes include community-based adaptation priorities to promote replication, up-scaling and integration of best practices derived from community-based adaptation projects; and 3) cooperation between member countries, promoting global innovation in adaptation to climate change, including variability.	www.preventionweb.net/files/25738_niger.pdf					
UNDP	Burkina Faso, Cameroon, Congo,	UNDP Africa	JICA		The AAP has a strategic focus aimed at creating an	Survey response					

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	Gabon, Ghana, Niger Nigeria, São Tomé and Príncipe and Senegal	Adaptation Programme (AAP)			<p>environment in which more informed and appropriate adaptation decisions and practices can be undertaken within the context of sustainable development. The Regional Team, based in Dakar, helps the National Teams build their capacities for development resilience through technical assistance provided in two streams: one responsive, the other strategic:</p> <p>Stream 1: responsive technical support – national teams obtain rapid and direct support from the regional team through a range of both passive and active initiatives;</p> <p>Stream 2: proactive strategic enhancement – the AAP has introduced a range of strategic transformational change initiatives designed to complement and extend the outputs of national projects. These initiatives focus on leadership, organizational effectiveness, integrated planning and gathering intelligence essential for long-term planning and action.</p> <p>Burkina Faso – the objective is to establish dynamic, long-term planning mechanisms to cope with climate variability and change; to strengthen leadership capacity and institutional frameworks to manage climate change risks and exploit related opportunities at local and national levels; to implement climate resilient policies and measures in NAPA priority sectors; and to mobilize financial resources to meet national adaptation costs.</p> <p>Focus area: policy formation and integration and disaster risk management.</p> <p>www.preventionweb.net/files/25668_burkinafaso.pdf</p> <p>Cameroon – this project supports integrated and comprehensive approaches to climate change in Africa.</p> <p>www.preventionweb.net/files/25671_cameroon.pdf</p> <p>Congo – recent activities include (i) training of 50 people from academia, government and civil society organizations on climate analysis; (ii) development of a hydro-climatic index to evaluate the vulnerability and adaptation of key sectors; (iii) aligned AAP with the National Scheme on Territorial Organization; (3) contributed to the integration of CC into</p>	www.undp-aap.org/					

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					<p>national legislation; (4) shared climate change adaptation knowledge on television and started knowledge-sharing processes with AAP Senegal. http://www.undp-aap.org/countries/congo</p> <p>Gabon – to put in place a stronger institutional framework for the management of the country’s coastal zone, home to the majority of Gabon’s population. The project will include strengthening scientific and technical capacities for coastal management and demonstrate innovate practices and technologies for the rehabilitation and management of coastal zones. www.preventionweb.net/files/25698_gabon.pdf</p> <p>Ghana – the objective of the project is to develop capacity and financing options to mainstream climate change adaptation in Ghana, with a focus on early-warning systems. www.preventionweb.net/files/25699_ghana.pdf</p> <p>Niger – activities include: (i) a study on climate risk management used in the development of the National System for the Prevention and Management of Food Crises; (ii) climate risk and opportunities training led to the revision of the General Assembly of Wood Exploiters’ activity plan; (iii) supported strategy to accelerate the integration of climate change into national development plans; (iv) developed a framework for accessing innovative finance for future climate change programming; (v) shared experiences and knowledge at international forums and through quarterly climate change newsletters. http://www.undp-aap.org/countries/niger</p> <p>Nigeria – activities include (i) conducted a study on vulnerability to climate change impacts and trained 91 people from Nigeria’s ministries, government agencies, research institutions, and universities, METEO and NGOs on climate analysis; (ii) developed guidelines for four sectors (health, energy, agriculture and infrastructure) to integrate climate change; (iii) established a network of NGOs on climate change and gender sensitive leadership to strengthen coordination of climate change adaptation responses between donors, civil society and women-focused NGOs covering all sectors; (iv)</p>						

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					<p>developed proposal for a National Climate Change Trust Fund; (v) produced newsletters on climate change work that have been disseminated widely. www.undp-aap.org/countries/nigeria</p> <p>São Tomé and Príncipe – the project will help to address climate change risks under the five APP global project outputs, focusing on strengthening i) adaptive long term planning capacities; ii) institutional and human resource capacities at all levels; iii) policies and measures with a focus on the already degraded area of northern São Tomé for pilot activities. World Bank funded components will focus primarily on coastal areas. The project will strengthen adaptation and lead to improved resilience to climate change at local, district and national levels. www.preventionweb.net/files/25778_saotomeeprincipe.pdf</p> <p>Senegal – the objective is to mainstream and integrate climate change adaptation into policy, governance and core development objectives through institutional frameworks, policy reform, capacity building, awareness raising and financial mechanisms. Shore erosions have also been identified as a focal area for action in Senegal. To address this, JICA has developed a series of training courses to build the knowledge and capacity of relevant Senegalese stakeholders. www.preventionweb.net/files/25779_senegal.pdf</p>						
UNDP*	Benin, Burkina Faso, Cameroon Cape Verde, CAR, Chad, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Republic of Congo, São Tomé and Príncipe, Senegal, Sierra Leone and Togo	Adaptation Learning Mechanism	GEF; World Bank Specific project funding is dependent on the project		<p>Adaptation to climate change is a growing priority for development agencies, governments and vulnerable communities. However, capacity and awareness are often limited and experiences have yet to be widely shared. In an effort to address existing adaptation knowledge needs, the UNDP and other agency partners launched the Adaptation Learning Mechanism (ALM) in 2007. UNDP is facilitating the ALM in close partnership with the UN Framework Convention on Climate Change (UNFCCC), UNEP, the World Bank and specialized UN agencies, including FAO.</p> <p>The ALM represents a collaborative, global learning process, with leadership, facilitation and strong participation by Southern Hemisphere institutions. Seeking to provide</p>	www.adaptationlearning.net/about					

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					stakeholders with a common platform for sharing and learning, the ALM bridges knowledge gaps by bringing relevant knowledge and stakeholders together to exchange information, experiences, and expertise.						
UNDP*	Côte d'Ivoire, Ghana, Nigeria and certain southern African countries	Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa	GEF Trust fund		The overall goal of this project was to assist sub-Saharan African countries to achieve sustainable management of their coastal and marine environment and resources by: 1) identifying areas, sites or living resources of regional and global significance that are suffering measurable degradation (i.e. "hot-spots"); 2) determining the sources/causes of this degradation to provide a basis for calculating incrementally at regional and extra-regional scales; 3) identifying areas, sites and resources of regional significance that are threatened with future degradation; 4) determining, through root-cause analysis, the fundamental causes of the damage or threat posed; and 5) designing a programme of interventions addressing problems of regional priority.	www.thegef.org/gef/pro ject_detail?projID=849					
UNDP-GEF; UNESCO/IOC	Cape Verde, The Gambia, Guinea Bissau, Mauritania and Senegal	Adaptation to climate change: responding to coastline change and its human dimensions in West Africa through Integrated Coastal Area Management	GEF Trust fund	2006 – 2010	The overall objective was to mainstream adaptation to climate change into integrated coastal area management planning in the participating countries through the development and implementation of pilot adaptation activities in response to shoreline change. This involved the development of strategies, policies and measures, based on technical/scientific information and appropriate policy instruments. A major preliminary objective was, therefore, to pilot adaptation activities in a local to sub-regional context.	www.preventionweb.net/files/25672_capeverde .pdf www.dev.adaptationlear ning.net/project/adapta tion-climate-change- responding-shoreline- change-and-its-human- dimensions-west-africa-t					
UNECA; WMO		African Centre of Meteorological Application for Development (A CMAD)	UNECA	1987 – ongoing	ACMAD is a weather and climate centre with African continental competence. It was created in 1987 by the Conference of Ministers of the United Nations Economic Commission for Africa (UNECA) and the World Meteorological Organization (WMO). ACMAD's mission is the provision of weather and climate information and the promotion of sustainable development of Africa (notably within the context	http://acmad.net/index _en.php					

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					of national strategies for poverty eradication), in the fields of agriculture, water resources, health, public safety and renewable energy.						
UNEP World Conservation Monitoring Centre	Chad,The Gambia, Mali, Sierra Leone, and Togo, Burkina Faso, Côte d’Ivoire and Ghana	Evolution of Protected Area systems with regard to climatic, institutional, social, and economic conditions in the West Africa Region 87 (also known as Climate Proofing Protected Areas in West Africa)	GEF; co-financing	2009 – 2015	The project will focus on developing science-based national- and regional-scale tools to support improved management of protected area systems in response to climate and other change impacts. Opportunities for transboundary collaboration will play a large part in the project activities, as these might offer some of the most effective solutions.	Review of Current and Planned Adaptation Action: Middle Africa. Alec Crawford, Hilary Hove and Jo-Ellen Parry. International Institute for Sustainable Development. 2011					
UNIDO*	Angola, Benin, Cameroon, Congo, DR of the Congo, Côte d'Ivoire, Gabon, Ghana, Equatorial Guinea, Guinea, Guinea-Bissau, Liberia, Nigeria, São Tomé and Príncipe, Sierra Leone and Togo	Combating Living Resource Depletion and Coastal Area Degradation in the Guinea Current LME through Ecosystem-based Regional Actions	GEF Trust Fund		A project goal was to build the capacity of Guinea Current countries to work jointly with other nations, regions and GEF projects in West Africa to define and address transboundary priority environmental issues within the framework of their existing responsibilities under the Abidjan Convention and its Regional Seas programme. The long-term development goals of the project were to: 1) recover and sustain depleted fisheries; 2) restore degraded habitats; and 3) reduce land- and ship-based pollution by establishing a regional management framework for sustainable use of living and non-living resources in the GCLME.	www.thegef.org/gef/project_detail?projID=1188					
UNITAR	Cameroon, Ghana, Mali, Niger and Nigeria	Advancing Capacity for Climate Change Adaptation (ACCCA)	IDRC; DEFRA; Swiss Federal Office for the Environmen t; NCAP; EC	2007– 2010	The rationale for this project is that countries lack scientific knowledge and understanding of climate risks and that this is an impediment to addressing climate variability. Activities include the following: identify and prioritize climate risks; assess available knowledge about risks and adaptation opportunities; develop, test, and disseminate risk communication materials that are designed to assist adaptation decisions; and identify critical knowledge gaps that impede effective adaptation decisions.	www.preventionweb.net/files/25668_burkinafas o.pdf www.acccaproject.org/accca/files/ACCCA_Broch ure_19pilotactions.pdf					

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					<p>Cameroon – the pilot action sought to study the empirical relationship between agriculture and farming decisions concerning climate variability by identifying, evaluating and popularising existing adaption methods. www.preventionweb.net/files/25671_cameroon.pdf</p> <p>Ghana – food Security and adaptation to Climate Change in the Afram Plains of Ghana.</p> <p>Mali – collaboration between communities and scientific organizations to identify and implement responsive water management actions in Mali.</p> <p>Niger and Tunisia – analysis of adaptation strategies to climate variability in the Sahelian Zone.</p> <p>Nigeria – the objective is to promote self-help livelihood groups to implement indigenous climate change adaptation options and poverty alleviation strategies. Local, context-specific needs and adaptation strategies will also be communicated to influential decision-makers. www.preventionweb.net/files/25763_nigeria.pdf</p>						
University of Bonn	Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Tanzania, Uganda and Zambia	West Africa Science Service on Climate change and adapted land use	German Federal Ministry of Education and Research	2010 – 2011	The project aimed to generate knowledge and develop analytical capabilities in West Africa to cope with climate change. It achieved this through the design of resilient land use systems and the development of measures to conserve or restore healthy ecosystems that allow sustainable development. It relied on cooperation between the West African research community and German expertise on climate change and adapted land management.	www.preventionweb.net/files/25699_ghana.pdf					
University of Zimbabwe; International Food Policy Research Institute*	Ghana, Mali and Senegal	Resilience and the African Smallholder: Enhancing the capacities of communities	DFID and IDRC through the CCAA programme	2007– 2011	This project aimed to enhance the ability of households, communities and relevant institutions to respond to changing circumstances with a view to reducing future threats to food security and environmental integrity. It aimed to do this by working with farmers to identify improved farming technologies and translating the results into action plans at the appropriate institutional level, whether local or national. It also promoted adaptation among vulnerable populations and provided regional organizations, policy-makers and farmers in sub-Saharan Africa with tools to identify and	www.preventionweb.net/files/25699_ghana.pdf					

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							Fisheri es	Aqua	CCA	DRM	
					<p>implement appropriate adaptation strategies.</p> <p>Mali – this project sought to strengthen the leadership and technical and organizational capacity of grassroots communities in the area of adaptation to climate change. It aimed to do this by selecting pilot projects, identifying needs in terms of capacity building, contracting providers of (public or private) capacity building, sharing the information generated with groups at risk and making a case before decision-makers. www.preventionweb.net/files/25722_mali.pdf</p> <p>Senegal – the objective was to establish a platform to facilitate the integration of scientific information, local adaptation strategies and policies for reducing vulnerability in Senegal. The project also aimed to put an observatory of climate change in place, sensitize local actors and identify and implement adaptation strategies to improve the living conditions of vulnerable populations, or at least slow down their degradation. If the experience proved successful, it will be repeated elsewhere. www.preventionweb.net/files/25779_senegal.pdf</p>						
UNOPS/UCC – Water; Minister of Environment, Ghana, Benin, Burkina Faso, Côte d’Ivoire, Mali and Togo	Volta Basin – Ghana, Benin, Burkina Faso, Côte d’Ivoire, Mali and Togo	Addressing Trans boundary Concerns in the Volta River Basin and its Downstream Coastal Area	GEF Trust Fund		The basin is threatened by increasing pollution and sediment loads, introduction of non-indigenous species harmful to human and ecosystem health, habitat degradation (wetlands, mangroves, estuaries). These threats are the result of to human activities, overfishing and excessive water withdrawals, accelerated erosion caused by deforestation, bush fires and overgrazing. Currently, there are no institutional arrangements for managing the water resources of the several transboundary rivers of the basin. The Project has three main components with associated objectives: (i) build capacity and create a regional institutional framework for the effective management of the Volta Basin; (ii) develop regional policy, legal and regulatory frameworks for addressing transboundary concerns in the Volta Basin and its downstream coastal areas; and (iii) initiate national and regional measures to combat transboundary environmental degradation in the Volta Basin.	www.thegef.org/gef/project_detail?projID=1111					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZATION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheries	Aqua	CCA	DRM	
West Africa Rural Foundation (WARF)	Gambia, Senegal and Sierra Leone	Support for sustainable climate change adaptation in marine artisanal fisheries communities in West Africa	Joint funding between FAO and WARF		The objective of the project is to support and promote climate change adaptation among value chain actors in selected artisanal fisheries communities in Sierra Leone, Senegal and Gambia. The focus will be on actors engaged in small-scale fishing, processing and marketing and the project will address climate change issues that threaten the artisanal fisheries sector in the targeted countries. It will build capacity of various stakeholders to better understand climate change issues and support its mainstreaming into fisheries development plans, policies and strategies. Community-based gender-specific climate change adaption action plans will be developed in a participatory manner and priority interventions with project time frame and budget will be implemented in pilot communities in each project country to reduce the vulnerability of the communities to the impact of climate change. Lessons learnt will be documented and disseminated widely for future replication and up-scaling.	Support for sustainable climate change adaptation in marine artisanal fisheries communities in West Africa, Project Document, FAO, 2013					
World Bank	Niger River Basin Authority member countries (Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger and Nigeria)	Niger Basin Water Resources Development and Sustainable Ecosystems Management Programme-APL2	World Bank	2011	To enhance regional coordination, development and sustainability of water resources management in the Niger River Basin. Component 3, “Sustainable management of selected degraded ecosystems and rehabilitation of small water infrastructure” sought to combine small water infrastructure rehabilitation and ecosystems management in order to support income-generating activities. Sectors included general agriculture, fishing and forestry sector (five percent).	www.worldbank.org/projects/P093806/niger-basin-water-resources-development-sustainable-ecosystems-management-project?lang=en Disaster Risk Management Programmes for Priority Countries. Global Facility for Disaster Reduction and Recovery. 2011					
World Bank	Mali, Mauritania, Senegal and Guinea	The Senegal River Basin Multi-Purpose Water Resources Development (APL) Project	World Bank	From 2010	To enhance regional integration between the riparian countries of the Senegal River Basin Organization (OMVS) for multi-purpose water resources development to foster growth and improve community livelihoods. Component 1 supports regional institutional development for water resources; Component 2 develops small hydraulic infrastructure and related activities, improves traditional fisheries, protects water resources through planning and management, and	www.aiddata.org/project/show/2417402 Disaster Risk Management Programmes for Priority Countries. Global Facility for Disaster Reduction					

Implementing ORGANIZATION(s)	COUNTRIES	NAME OF PROJECT	Funding ORGANIZA TION(s)	PROJECT PERIOD-	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE	Priority ranking				
							Fisheri es	Aqua	CCA	DRM	
					reduces waterborne diseases. Component 3 supports regional multi-purpose and multi-sectoral master planning through the preparation of the Comprehensive Master Plan for the Senegal River Basin.	and Recovery. 2011					
World Bank*	Ethiopia, Ghana and Mozambique	Economics of Adaptation to Climate change	Netherland s, Switzerland and the UK	2008 – 2010	The two specific objectives of the study were: 1) to develop a global estimate of adaptation costs to inform the international community’s efforts to tailor support and provide new and additional resources to help vulnerable developing countries meet adaptation costs; and (2) 2) to support decision-makers in developing countries to better evaluate and assess the risks posed by climate change and to better design strategies to adapt to climate change.	www.preventionweb.net/files/25699_ghana.pdf					

7.8 National initiatives and interventions in fisheries and aquaculture in respect to climate change and disasters

The sections below provide detail on national fisheries and aquaculture initiatives and programmes relevant to CCA and/or DRM and CCA and/or DRM initiatives and programmes relevant to fisheries and aquaculture.

Project period		Priority ranking of level of engagement	
Past project		No engagement of subject area	
Current project		Some engagement of subject area	
Planned project		Core focus on subject area	

COUNTRY	NAME OF PROJECT	Funding ORGANIZATION(s)	Implementing ORGANIZATION(s)	PROJECT PERIOD- Including past, current and future	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE/SURVEY	Priority ranking			
							Fisheries	Aqua	CCA	DRM
Benin	Adaptation of Cotonou Lagoon Ecosystems and Human Communities to Sea Level Rise and Extreme Weather Events Impacts	Adaptation Fund	Fonds National Pour L'Environnement (FNE)		The general objective of the project is to contribute to the NAPA through five components: 1) bank protection, restoration and improvement of socioeconomic infrastructures; 2) fight against pollution of lagoon and natural environment; 3) protect against seasonal flooding of banks and riparian area of Cotonou lagoon; 4) integrate climate change into the fishing laws regulating the channel; and 5) awareness raising and training for local communities on climate risks, adaptation techniques and good practices.	www.adaptation-fund.org/project/adaptation-cotonou-lagoon-ecosystems-and-human-communities-sea-level-rise-and-extreme-weather				
Benin	Community-Based Coastal and Marine Biodiversity Management Project	World Bank	Government of Benin	2008 – 2014	The objective is to promote participatory conservation and sustainable use of biological diversity of coastal wetlands and marine resources (including fisheries) through the establishment of community-based conservation areas in high priority biodiversity sites. More specifically, the proposed project will (i) assist local communities and municipalities in the formulation and implementation of sustainable resource management plans (improved practices and adequate institutional arrangements); (ii) support alternative livelihoods that take pressure off the coastal resources; and (iii) support priority conservation activities in the coastal corridor.	www.worldbank.org/projects/P071579/community-based-coastal-marine-biodiversity-management-project?lang=en				

COUNTRY	NAME OF PROJECT	Funding ORGANIZATION(s)	Implementing ORGANIZATION(s)	PROJECT PERIOD- Including past, current and future	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE/SURVEY	Priority ranking			
							Fisheries	Aqua	CCA	DRM
Benin	Integrated Adaptation Programme to Combat the Effects of Climate Change on Agricultural Production and Food Security	GEF LDCF	UNDP	2010 – 2014	The objective of the project is to strengthen capacities of agricultural demonstration communities in selected municipalities to adapt to extreme events and climate change in four vulnerable agro-ecological zones in Benin. This project is a direct result of the urgent adaptation priorities identified in Benin's NAPA.	www.preventionweb.net/files/25663_benin.pdf				
Benin	Restoration of fisheries and aquaculture development in artisanal fisheries throughout PADPPA (Participative Artisanal Fisheries Development Support Programme)	IFAD and African Development Fund (ADF)	Government of Benin	2002 – 2008	Programme Development Support Participatory Artisanal Fisheries (PADPPA) was a response to the problems of overfishing that led to the decline of the purchasing power of fishers operating in the waters of southern Benin. Its sectoral objective was the fight against poverty and improving living conditions of people living mainly from fishing – in particular, households in the poorest fishers, with special attention to women. The programme was specifically designed to achieve a balance between natural resources degradation and the number of fishers to establish the basis for sustainable development.	Identifying opportunities for climate-smart agriculture investments in Africa. Giacomo Branca, Timm Tennigkeit, Wendy Mann, Leslie Lipper. Food and Agriculture Organization of the United Nations Rome, April 2012 www.aiddata.org/project/show/2411097				
Benin	Strengthening Capacity to Adapt to Climate Change in Rural Benin	DFID, IDRC through the CCA programme	Implementing organization: Initiatives pour un développement integer durable (IDID-ONG) (with other NGOs)	2007 – 2011	This action research project aimed to reduce food insecurity and rural poverty in Benin by helping populations better adapt to climate change. The project operated at three levels (department, commune and field school) to encourage optimal use of weather and agricultural potential, available research results and local knowledge, as well as experimentation on adaptation options, including integrated soil management.	www.preventionweb.net/files/25663_benin.pdf				
Burkina Faso	Enhancing the Disaster Risk Reduction Capacity in Agriculture and Rural Development	Global Facility for Disaster Reduction and Recovery	Agriculture and Rural Development and Sustainable Agriculture Systems, Knowledge and Information (SASKI)	2008 – 2010	Preparation of ten capacity building modules on pre- and post- disaster risk management, and mainstreaming of disaster risk reduction in agriculture and rural development, with a focus on climate change adaptation.	www.preventionweb.net/files/25668_burkinafaso.pdf				
Burkina Faso	Renovation of hydro agriculture in Bonvalé		BOAD	2007 – 2015	A study of the Bonvale dam and hydro-agricultural perimeter to lay the foundations for sustainable development and the fight against poverty through the increased activity of the water, agriculture and livestock sectors. Increasing rural incomes while promoting access to basic social needs, through increasing crop and livestock production and sustainable management of natural resources.	www.aghi-sarl.com/index.php?option=com_content&task=view&id=8&Itemid=12 Disaster Risk Management Programmes for Priority Countries. Global Facility for Disaster Reduction and Recovery. 2011				

COUNTRY	NAME OF PROJECT	Funding ORGANIZATION(s)	Implementing ORGANIZATION(s)	PROJECT PERIOD- Including past, current and future	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE/SURVEY	Priority ranking			
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Burkina Faso	Renovation of the Bam lake	IFR(International River Foundation, Australia) and Alexander River Restoration Administration (private architectural and engineering firm) (ARR)	IFR(International River Foundation, Australia), ARR	2007 – 2015	Natural processes – sedimentation, high evaporation and extreme droughts – have caused environmental changes to the Bam Lake. The constantly growing population, together with global impacts from human activity, has caused over-exploitation of the area's natural resources. The project aims to secure long-term water supply; secure a healthy and sustainable ecosystem; supply physical conditions which will secure a reasonable socioeconomic status in order to avoid migration from the area; and secure sustainable management of resources by the local population.	www.restorationplanning.com/bam.html Disaster Risk Management Programmes for Priority Countries. Global Facility for Disaster Reduction and Recovery. 2011				
Cameroon	Developing a method for Adaptive management and protection from climate change in mangrove and coral reef ecosystems	GEF/UNDP; WWF; partner organizations	WWF; Wetlands International; Institute of Applied Sciences; Wildlife conservation Society; communities	2007 – 2009	This project sought to develop a generalizable approach for accessing vulnerability and adaptation of mangroves and associated ecosystems in high biodiversity tropical mangrove areas and associated coral reef, sea-grass and upland ecosystems.	www.preventionweb.net/files/25671_cameroon.pdf http://wwf.panda.org/about_our_earth/aboutcca/problems/rising_temperatures/hotspot_map/cameroon.cfm				
Cape Verde	<i>Development of a GEF LDCF PIF for CCA</i>	FAO (funding from Japan)	Government of Cape Verde	01 Oct 2011 – 31 Dec 2012, ongoing/ pipeline	Development of PIF for GEF LDCF funding underway – with a national workshop to discuss main climate change vulnerability issues and the content of a project for strengthening adaptation in fisheries.	FAO ongoing projects				
Cape Verde	Integrating climate change risks and opportunities into national development processes and United Nations country programming	Spain	UNDP	2008 – 2010	The purpose of the project was to develop the capacity of UN staff and government stakeholders to integrate risks and opportunities of climate change in national programming and development policies, such as the United Nations Development Assistance Frameworks, sectoral programmes and development plans. The project team undertook a risk screening analysis of the One UN Programme to identify climate risks, adaptation opportunities, risks of maladaptation and potential adaptation measures to manage the risks. During the second phase of the project development plans were completed. The project team evaluated the PRSP and highlighted key adaptation measures for Cape Verde.	www.preventionweb.net/files/25672_capeverde.pdf				

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							Fisheries	Aqua	CCA	DRM
Cape Verde	National Platform for Disaster Risk Reduction (DRR)		Government of Cape Verde, through the National Service of Civil Protection (NSCP)		The goals of the project are to: 1) implement and strengthen the early warning system at national, municipal and community levels, using the existing observation and monitoring Network; 2) map the major risks in the areas most vulnerable to planning strategic responses in terms of reception and shelter of populations affected by disasters; 3) increase the participatory engagement at a community level, using a systematic approach of experience sharing; and 4) capacity building of "Hazard and Vulnerability Mapping", taking into account the natural environment, livelihoods, knowledge and traditional techniques.	United Nations International Strategy for Disaster Reduction Regional Office for Africa (2011). Disaster reduction in Africa: ISDR Informs, 2010 mid – 2011 issue. http://reliefweb.int/sites/reliefweb.int/files/resources/23130_unisdrfricainforms2010midisue2011.pdf				
Gambia	Strengthening Gambia's climate change early warning systems	GEF LDCF	UNEP; Ministry of Fisheries; water resources and national assembly matters	2011 – 2014	The objective is to reduce vulnerability to climate change through enhanced capacity for science-based decision-making and planning for affected populations to respond to climate change through a strengthened early warning and informational mechanism. This project seeks to implement The Gambia's top priorities as identified in its NAPA.	www.preventionweb.net/files/25793_thegambia.pdf				
Ghana	Building a gender responsive culture in DRR	Government of Ghana	The National Platform for Disaster Risk Reduction and Climate Change Adaptation – Government of Ghana		The aims are: 1) increase participants' understanding of gender concerns and needs in DRR; 2) develop participants' capacities in addressing gender issues in disaster risk reduction; and 3) strengthen participants' ability to urge the government to take action to integrate gender perspectives into disaster risk reduction legislation, policies and programmes for sustainable development.	United Nations International Strategy for Disaster Reduction Regional Office for Africa (2011). Disaster reduction in Africa: ISDR Informs, 2010 mid – 2011 issue. http://reliefweb.int/sites/reliefweb.int/files/resources/23130_unisdrfricainforms2010midisue2011.pdf				
Ghana	Promoting Value Chain Approach to Adaptation in Agriculture	GEF SCCF	IFAD	2010 –	To promote activities that reduce climate induced risks to the achievement of food security and income generation objectives for the rural communities in Ghana.	www.preventionweb.net/files/25699_ghana.pdf				

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							Fisheries	Aqua	CCA	DRM
Ghana	Re-thinking water storage for climate change adaptation in Sub-Saharan Africa	GIZ	International Water	2008 – 2011	The primary aim of this project was to develop guidance on methods for better inclusion of climate change in the planning and management of the full range of agricultural water storage options. The guidance encompassed approaches to evaluating the socio-political, institutional and biophysical conditions under which various storage options should or should not be implemented and which investments in water storage improve resilience and reduce risks for farming communities.	www.preventionweb.net/files/25699_ghana.pdf				
Guinea Bissau	Mangrove ecosystem services and climate change adaptation in Guinea Bissau	Wetlands International	Wetlands International	2009 – 2010	The objective was to improve the knowledge base on the linkages between mangrove ecosystem services and climate change adaptation in Guinea-Bissau, as a basis for the development of adaptation policies, land use planning and community resilience.	www.preventionweb.net/files/25703_guineabissau.pdf				
Guinea-Bissau	Strengthening resilience and adaptive capacity to climate change in Guinea- Bissau's agrarian and water sectors	GEF- LDCF	Secretariat of State for the Environment and Sustainable Development Environment Directorate (SEADS)	2010 – 2015	To increase the resilience and enhance key adaptive capacity to address the additional risks posed by climate change to the agrarian and water sectors in Guinea-Bissau.	www.thegef.org/gef/project_detail?projID=4019				
Liberia	Enhancing resilience of vulnerable coastal areas to climate change risks	GEF LDCF	UNDP; Environmental protection agency		The aim of the project is to reduce vulnerability and build resilience of local communities and socioeconomic sectors to the threats of climate change in Liberia's coastal areas. It responds to the objectives of the third priority NAPA project.	www.preventionweb.net/files/25716_liberia.pdf www.thegef.org/gef/project_detail?projID=3885				
Liberia	Strengthening local community capacity to combat climate change and biodiversity loss in the Lake Piso regions	UNDP;GEF Small Grants Programme	Farmers Associated to Conserve the Environment	2010 – 2011	The project sought to develop the capacities of local communities in mitigating the impacts of climate change through the establishment of a woodlot plantation in the Lake Piso Basin. The project also sought to reduce the level of mangrove forest depletion in the Lake Piso Basin and address the issue of poverty reduction, environmental sustainability and food security.	www.preventionweb.net/files/25716_liberia.pdf				
Mali	Awareness raising of elected community representative's on climate change adaptation	Danish Folkecenter for Renewable Energy; SIDA	Mali-Folkecentre (MFC); Christian Aid	Unknown	The objective is to raise awareness of elected representatives and rural populations on climate change impacts in order to encourage adaptation consideration in local development plans.	www.preventionweb.net/files/25722_mali.pdf				

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							Fisheries	Aqua	CCA	DRM
Mali	Enhancing adaptive capacity and resilience to climate change in the agricultural sector in Mali	GEF LDCF; co-financing	UNDP ; Ministere de l'Agriculture, de l'Elevage et de la Peche	2010 – 2014	The objective is to enhance adaptive capacities of vulnerable rural populations to the additional risks posed by climate change on agricultural production and food security in Mali and to achieve eight priority projects indicated in Mali's NAPA.	www.preventionweb.net/files/25722_mali.pdf www.thegef.org/gef/project_detail?projID=3776				
Mali	Integrating climate resilience into agricultural production for food security in rural areas of Mali	GEF LDCF; co-financing	FAO; Ministry of Agriculture	2011 – 2015	The objective is to increase the resilience of the agricultural sector and livelihoods to climate variability and change in Mali in order to adapt to climate change.	www.preventionweb.net/files/25722_mali.pdf www.thegef.org/gef/project_detail?projID=3979				
Mali	Reinforcement of decision makers' and civil society's capacity on climate change	Embassy of Denmark	MFC; Environment Department	Unknown	The objective is to facilitate the integration of climate change considerations, such as adaptation, into national policies and development strategies.	www.preventionweb.net/files/25722_mali.pdf				
Mali	Supporting the vulnerable: increasing the adaptive capacity of agro-pastoralists to climate change in West and Southern African using a trans-disciplinary research approach	BMZ	International Livestock Research Institute	2008 – 2011	The purpose of this project was to co-generate methods, information and solutions between local communities, local and international scientists, policy makers and other actors involved in climate change and adaptation programmes in West and Southern Africa. and more particularly in Mali and Mozambique.	www.preventionweb.net/files/25722_mali.pdf .				
Niger	Implementing NAPA priority interventions to build resilience and adaptive capacity of the agriculture sector to climate change	GEF LDCF	NECSD	2009-unknown	The objective is to implement urgent and priority interventions that will promote enhanced adaptive capacity of the agricultural sector to address the additional risks posed by climate change, and adapt to climate change.	www.preventionweb.net/files/25738_niger.pdf				
Niger	Niger Basin Water Resources Development and Sustainable Ecosystems Management Programme	World Bank	Government of Niger	Pipeline	The objective is to increase access to water for agriculture development and capacity for energy generation in the Niger part of the Niger Basin. The programme has three components, namely: 1) institutional strengthening of the Niger Basin Authority (NBA); 2) the construction of the Kandadji programme energy infrastructure; and 3) implementation of environmental and social	www.worldbank.org/projects/P130174/first-part-second-phase-niger-basin-water-resources-development-sustainable-ecosystems-management-program-apl-2a?lang=en				

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							Fisheries	Aqua	CCA	DRM
					safeguards, and growth pole community development – supporting resource planning and community development, lesson learning and local development of a growth pole.					
Niger	Niger Community Action Project for Climate Resilience	World Bank	Government of Niger	2012 – 2017	The objective is to improve the resilience of the population and of production systems to climate change and variability in targeted communes. These objectives will be achieved through three separate and complementary components: 1) mainstreaming climate resilience into development strategies at national and local levels; 2) integrating climate resilience practices into agro-sylvo-pastoral systems and local populations' social protection measures; and 3) ensuring coordination of all the activities of the project, including monitoring and evaluation activities and SPCR overall strategic coordination.	www.worldbank.org/projects/P125669/niger-community-action-project-climate-resilience?lang=en				
Niger	Programme on reinforcing capacities for preventing and managing crisis (Programme de renforcement des capacités pour la prévention et la gestion des crises)	UNDP (BCPR)	UNDP	2010 – 2013	To reduce poverty and vulnerability through reinforcing capacities of national and local institutions to prevent and manage socio-economic crisis and disasters through (i) prevention and management of food crisis and disasters; and (ii) prevention and management of socio-political conflicts.	www.preventionweb.net/files/25738_niger.pdf				
Niger	UNDP-GEF Community-Based Adaptation	GEF	UNDP and United Nations volunteers		The objective of the CBA project in Niger is to improve the capacity of local communities to adapt to climate change and variability through community-based measures that increase the resilience of subsistence systems and ecosystems. Priority intervention sectors include agriculture, livestock and forestry. There are currently two projects under implementation and three more being planned.	www.africa-adapt.net/projects/80/				

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							Fisheries	Aqua	CCA	DRM
Nigeria	Adaptation and mitigation to climate change impacts in Nigerian fisheries of the Lake Chad Basin	Initially FAO. Full GEF project	Government of Nigeria	In discussion	Development of a PIF for LDCF funding following on from a regional workshop at LCBC. Focus on adaptation and resilience at community level, with potential focus on post-harvest market activities.	NFDS developing PIF with FAO				
Nigeria	Advocating alternative livelihoods and improved processing techniques to fishing communities	Bowen University; Iwo Nigeria	Department of Animal Sciences and Fisheries Management, Bowen University, PMB 284; Iwo Nigeria	Two to three years	The project has identified the major risk factors of flooding, fluctuating temperature, unevenly distributed rainfall patterns leading to the washing away of breeding grounds, poor hatchability and small sized fish. Alternative livelihood strategies and improved solar powered processing techniques have been advocated.	Survey response				
Nigeria	Aquaculture of catfish (Southwest and South Nigeria)	USAID	USAID	Current	Azemor Fish Farm is an integrated production and processing facility which produces high quality catfish and raises small farmers' incomes by teaching them how produce smoked fish.	FAO Mission report Nigeria, Abuja 27 May – 2 June 2012 by Katrien Holvoet and Solomon Ovie. Coordination Strategic response to HIV/AIDS for fishing communities in Africa NIFFR Researcher http://nigeria.usaid.gov/newsroom/news-story/us-ambassador-visits-usaid-supported-aquaculture-projects-oyo-state				
Nigeria	Assessing the vulnerability of the Freshwater Fish of West Africa	Federal College of Freshwater Fisheries Technology	Federal College of Freshwater fisheries Technology	Up to six months	Workshop to assess the climate change vulnerability of the freshwater fish of West Africa.	Survey response				
Nigeria	Assistance to Nigeria in Assessing Adaptation Requirements in the Agriculture sector	CIDA	CUSO; Marbek resource consultants; Nigeria Environmental Study/action team (NEST)	2007 – 2012	The objective was to promote the development and dissemination of methodologies and tools for climate change impact assessment and adaptation planning to enhance the interface between the agriculture, meteorological and socioeconomic communities, farmers, pastoralists and other stakeholders.	www.preventionweb.net/files/25763_nigeria.pdf				

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							Fisheries	Aqua	CCA	DRM
Nigeria	Civil Society Coalition on Disaster Risk Reduction (CSCDRR)	-	Civil Society Coalition on Disaster Risk Reduction (CSCDRR)		<p>CSCDRR is an inter-disciplinary, civil society coalition to address the research and policy needs in promoting disaster management and prevention for sustainable development of disaster prone communities.</p> <p>The main purpose of the coalition is to form an effective network of civil society organizations to start working together, supplement and complement government efforts in effectively combating and or addressing disaster preparedness and management in the country. It will also seek to identify collaborative mechanisms in promoting disaster risk reduction in Nigeria.</p> <p>The network will:</p> <ol style="list-style-type: none"> 1) facilitate the sharing of information and experience; 2) promote civil society organizations and counterpart actors to pursue similar objectives and benchmarks; and 3) pursue an inclusive and participatory approach, right from the grassroots. <p>The emphasis will be on providing education and raising awareness about disaster prevention, then on making exhaustive preparations for dealing with disasters when they occur, including empowering and rehabilitating disaster victims.</p>	<p>United Nations International Strategy for Disaster Reduction Regional Office for Africa (2011). Disaster reduction in Africa: ISDR Informs, 2010 mid – 2011 issue.</p> <p>http://reliefweb.int/sites/reliefweb.int/files/resources/23130_unisdrafricainforms2010midisue2011.pdf</p> <p>http://ngonewsafrika.org/archives/2066</p>				
Nigeria	Fisheries Society of Nigeria	Funded through membership fees	-		<p>ISON is a non-governmental organization for the fisheries subsector and is committed to promoting the contribution of fisheries to the Nigerian economy, ensuring fish food security through sustainable investments and livelihoods, and improving fisheries planning, research and development through advocacy and optimal utilization of the wealth and experience of the Society's professional members.</p> <p>The Society provides safety net strategies against the negative impact of climates change to both farmers and fishers.</p>	<p>Survey response</p> <p>www.fison.org.ng/</p>				

COUNTRY	NAME OF PROJECT	Funding ORGANIZATION(s)	Implementing ORGANIZATION(s)	PROJECT PERIOD- Including past, current and future	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE/SURVEY	Priority ranking			
							Fisheries	Aqua	CCA	DRM
São Tomé and Príncipe	Adaptation to Climate Change	World Bank	Government of São Tomé	2011 – 2015	The objective of the project is to increase the adaptive capacity of vulnerable coastal communities in São Tomé and Príncipe to the adverse impacts of climate variability and change. The project will help São Tomé to be better prepared for climate change impacts in the future. Its components are: 1) coastal early warning system; 2) coastal protection for vulnerable communities; and 3) project Management.	www.worldbank.org/projects/P111669/sao-tome-adaptation-climate-change?lang=en				
São Tomé and Príncipe	São Tomé and Príncipe adaptations to climate change	GEF LDCF	Ministry of Public Works and Natural Resources		To increase the adaptive capacity of vulnerable coastal communities in São Tomé and Príncipe to the adverse impacts of climate variability and change.	www.thegef.org/gef/project_detail?projID=4018				
São Tomé and Príncipe	SICLIMAD: System for Climactic and Sea Information to Support the Sustainable Development of São Tomé and Príncipe	Portuguese Institute for the Environment; São Tomé e Príncipe Meteorological Institute	São Tomé e Príncipe Meteorological Institute; Evora University; Audimobil	Duration unclear	This project is aimed at supporting adaptation to climate change by monitoring the regional climate, climate variability and its impacts and conducting numerical modeling of the weather and sea conditions. The project beneficiaries include environmental technicians, fishers, transport workers, policy makers, economic decision-makers and the general public. The project includes the donation of three automatic weather stations.	www.preventionweb.net/files/25778_saotomeeprincipe.pdf				
Senegal	Adaptation to Coastal Erosion in Vulnerable Areas	Adaptation Fund	Centre de Suivi Ecologique	2011 – 2013	Coastal flooding and erosion are the main causes of the loss of physical and financial assets, especially the loss of land along the coast. An intensification of coastal erosion phenomena may lead to the disappearance of beaches. The farming sector of Senegal is heavily dependent on the climate and the majority of the country's economy is concentrated on coastal areas. The project's overall objective is to contribute to the implementation of Senegal's NAPA. The project encompasses the areas of Rufisque, Saly, and Joal.	www.adaptation-fund.org/project/1327-adaptation-coastal-erosion-vulnerable-areas				
Senegal	Integrated Marine and Coastal Resources Management Project	IDA; GEF	Government and communities of Senegal	2004 – 2011	To strengthen the conservation and management of Senegal's marine and coastal ecosystems, which are globally significant and vital to the sustained livelihoods of coastal communities. The specific objectives were (i) to empower coastal communities to take concrete actions to reduce overfishing; and (ii) to protect sensitive coastal environments and the biodiversity they support.	Disaster Risk Management Programmes for Priority Countries. Global Facility for Disaster Reduction and Recovery. 2011 www-wds.worldbank.org/external/default/WDSContentS				

COUNTRY	NAME OF PROJECT	Funding ORGANIZATION(s)	Implementing ORGANIZATION(s)	PROJECT PERIOD- Including past, current and future	AIM/KEY ACTIVITIES	SOURCE DOCUMENT/ WEBSITE/SURVEY	Priority ranking			
							Fisheries	Aqua	CCA	DRM
						erver/WDSP/IB/2008/11/06/000334955_20081106014946/Rendered/PDF/463310PJPRO081ONLY10IDA1R200810294.pdf				
Senegal	Sustainable Management of Fish Resources - under the Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub-Saharan Africa	GEF Trust Fund	Government of Senegal through the Ministry of Maritime Economy	2005 – ongoing	The fisheries sector in Senegal has experienced uncontrolled expansion, specifically in the number of fishers, boats and gear, leading to an overexploitation of the resource base, with severe implications for food security and economic growth. The objective of the proposed project is to empower local fisher communities to co-manage coastal fisheries resources and to conserve and protect the key habitats that support these resources.	www.thegef.org/gef/project_detail?projID=3314				
Sierra Leone	Integrating Adaptation to Climate Change into Agricultural Production and Food Security in Sierra Leone	GEF LDCF	Ministry of Lands, Country Planning and Environment and Ministry of Agriculture and Food Security	2010 – 2015	The objective is to lessen the impact of climate change on vulnerable rural communities, as well as on natural resources critical for sustaining agricultural production and increase food security.	www.preventionweb.net/files/25782_sierraleone.pdf				
Togo	Prevention and Management of Crises and Catastrophes	UNDP	UNDP	2007 – 2010	The objective was to implement a national management programme that will also address adaptation needs.	www.preventionweb.net/files/25795_togo.pdf				

7.9 NAPA priority actions

The sections below provides a list of the priority actions for fisheries and aquaculture as identified in the NAPAs for each of the LDCs of the Western and Central sub-region. These actions will require support for implementation.

Country	Relevant priority (current and planned) adaptation actions identified in the NAPAs
1. Benin	<p>Current:</p> <ul style="list-style-type: none"> • Support fishers' associations • Control overexploitation of fisheries resources • Fishers encouraged to become fish traders or market gardeners/farmers <p>Planned:</p> <ul style="list-style-type: none"> • Regeneration and conservation of aquatic ecosystems (especially in the south) • Promoting income generating activities • Developing mechanisms to prevent siltation of water courses • Protection of watersheds and water bodies • Reorganization of some fisheries • Improved systems for short cycle crops • Revitalizing and encouraging aquaculture • Protection of the coastline East of Sifato and Grand Popo • Developing lagoon fishing and aquaculture • Improved sanitation for lakeside villages • Suggested project – protection of the coastal zone against rising sea level
2. Burkina Faso	<p>Current:</p> <ul style="list-style-type: none"> • Regulating fishing villages <p>Planned:</p> <ul style="list-style-type: none"> • Development of aquaculture schemes • Stocking some rivers
3. Gambia	<p>Current:</p> <ul style="list-style-type: none"> • Increased fishing effort (extra days at sea) • Unsuccessful attempts at tiger shrimp mariculture • Change in type of fishery (harvest previously under-utilised species) • Reduction of post-harvest losses (use of preservation techniques) • Seasonal/permanent migration of fisherfolk (to areas of higher productivity) <p>Planned:</p> <ul style="list-style-type: none"> • Aquaculture (not new) • Post-harvest preservation of fish (not new) • Fish imports • Fishing gear restrictions (not new) • Closed seasons

Country	Relevant priority (current and planned) adaptation actions identified in the NAPAs
	<ul style="list-style-type: none"> • Improved fishing infrastructure • Closed areas • Regulating TACs • Regulating fleet sizes • Dietary adjustments (not new) • Improved fish marketing • Improved weather forecasting • Project concept: restoration/protection of coastal environments • Project concept: increasing fish production through aquaculture and conservation of post-harvest fishery products
4. Guinea	Planned: <ul style="list-style-type: none"> • Community outreach for improved mariculture • Protection of spawning areas in the estuaries of the Fataha, Konkouré and Méllacoré • Promotion of the use of solar powered fish dryers (to reduce mangrove deforestation)
5. Guinea Bissau	Planned: <ul style="list-style-type: none"> • Preparation of an Integrated Management Programme of Coastal Resources (PGIRC) and its respective Plan of Action on the Coast (PAC) • Acquisition of knowledge on population dynamics of marine resources to promote integrated management, zone management and appropriate legislation to ensure protection of resources, with a focus on access and assessment of local hydro meteorological risks • Research on stocks to assess sustainable yields and inform the implementation of the precautionary approach and/or conservation and management measures • Promote experimental aquaculture in coastal areas • Alternatives to cutting mangroves for use in fish smoking • Project concept: capacity building in prevention and protection of mangroves • Project concept: observatory for mangrove monitoring and evaluation and monitoring of coastal area erosion • Project concept: protection, conservation and enhancement of fishing and coastal resources project
6. Liberia	Planned: <ul style="list-style-type: none"> • Reducing the number of fishing licenses issued to foreign vessels • Raising the licensing fee for demersal trawlers • Regulating fishing practices to prevent overexploitation and fishing in restricted areas • Instituting appropriate surveillance of Liberian fishing waters • Funding research aimed at fishery-related database development • Formulating a national fishing policy
7. Mali	<ul style="list-style-type: none"> • Suggested project: programme of aquaculture development (2008–2012)
8. Niger	Planned: <ul style="list-style-type: none"> • Develop fisheries activities • Improve agricultural production, including fisheries • Restore silted fishing ponds (component of a suggested project: protection of riversides and restoration of silted ponds)
9. São Tomé and Príncipe	Priority project concepts: <ul style="list-style-type: none"> • Training and equipment for artisanal fishers • Placement and installation of fish aggregating devices in coastal zones

Country	Relevant priority (current and planned) adaptation actions identified in the NAPAs
	<ul style="list-style-type: none"> • Construction of shelters and parks for artisanal fishing • Construction of infrastructure for protection of vulnerable communities • To limit the displacement of local communities owing to the impacts of climate change, reduce the exposure of these populations to the marine floods <p>Adaptation actions:</p> <ul style="list-style-type: none"> • Improvement of the construction of fishing infrastructure • Delimitation of fishing areas with solar signalling buoys • Distribution of meteorological forecasts for bad weather • Installation of communication and rescue systems linked to extreme weather • Distribution of navigation and rescue equipment (GPS, compasses and lifejackets) • Construction of physical barriers (e.g. wave breaks, protective barriers and ditches) in areas vulnerable to storms • Creation of new spaces for parking canoes • Training of fishers in new technologies, so they are more resistant to change
10. Senegal	<p>Planned:</p> <ul style="list-style-type: none"> • Project concept: protection of the coastal zone (specifically the activity: restoration of mangroves, which is the only component relevant to fisheries)
11. Sierra Leone	<p>Planned:</p> <ul style="list-style-type: none"> • Discourage the use of destructive fishing methods e.g. poisoning, use of explosives and inappropriate fishing gear • Livelihood diversification e.g. tailoring, trading or farming • Monitor coastal ecosystems and processes • Promote sustainable fishing practices and develop aquaculture • Improve weather forecasting and develop marine meteorological services • Improve fisheries legislation and strengthen fisheries management policies and institutions • Improve traditional fishing practices and community livelihoods • Preserve and restore essential habitats and promote conservation and environmental education • Improve capacity in the fisheries sector • Foster international and national cooperation • Provide logistics and communication equipment • Project concept: develop an early warning system • Project concept: establish a long-term study of the multi species fisheries • Project concept: delineation and restoration of vulnerable (fisheries) habitats and ecosystems • Project concept: improve the quality on fisheries related data and research • Project concept: develop and enact policies and regulations relevant to the development of coastal communities and critical coastal ecosystems preservation
12. Togo	<p>Planned:</p> <ul style="list-style-type: none"> • Development of fish farming • Prevention of water pollution • Strengthen the protection of the coastline against coastal erosion in the eastern part of the Autonomous Port of Lomé • Project concept: initiate income generating activities for market gardeners and communities of fishers to cope with adverse effects of climate change

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