



FAO/GLOBAL ENVIRONMENT FACILITY PROJECT DOCUMENT



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EXECUTIVE SUMMARY

The Benguela Current Large Marine Ecosystem (BCLME) spans some 30 degrees of latitude, extending from Angola's Cabinda Province in the north, to just east of Port Elizabeth in South Africa. It is one of the world's richest marine ecosystems and supports an abundance of life; sustaining both artisanal and large-scale fishery activities which contribute to local food security and employment for hundreds of thousands of people in areas of limited alternatives, and serve as important drivers of economic development. Angola's fisheries are very important for domestic food supply (90 percent of fish produced is sold in the domestic market) and, especially small-scale, artisanal fisheries are the main or sole means of livelihoods and food provision for a large part of the population in coastal areas. Namibia does not have a well-developed artisanal fishery because of the harsh coastal environment and its fisheries are primarily commercial but still provide essential employment, livelihoods and cheap sources of protein for Namibia and neighbouring countries. Fisheries are the third largest contributor to the country's GDP. In South Africa, while making a small percentage contribution to GDP, fisheries also provide essential benefits to coastal populations and economies, often in areas with very limited alternative sources of livelihood.

The fisheries sectors in the three countries are facing a number of serious challenges to ensuring sustainable use of the productive but vulnerable marine resources that support them. These include over-exploitation of resources by fisheries, impacts on the aquatic ecosystems from land and aquatic resource use within other sectors including coastal zone development and offshore mining and oil and gas extraction. All these negatively affect the integrity, resilience and productivity of the ecosystem. Decreased productivity of fishery resources impacts on the livelihoods and, in some small-scale communities, the food security of those dependent on fisheries and leads to a reduction in the economic returns from commercial fisheries at national and regional scale.

Climate variability and change form an additional challenge that could potentially push the natural ecosystem beyond its limits and the institutions established to manage human uses of and impacts beyond their capacity to do so. Impacts are already being felt through changes in surface water temperatures, an increased frequency of Benguela Niños and other such intrusions of warm, nutrient-poor water from southern Angola, an increase in winds in the summer months, a general decline in oxygen concentration, and sea level rise. Changes in the aquatic food web have also been observed, including distribution shifts in important fisheries resources with marked negative social and economic impacts.

The countries have made significant efforts to address threats to the BCLME. These include the development and signature of a legally binding Benguela Current Convention and the establishment of an intergovernmental Benguela Current Commission (BCC) to 'promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the BCLME to provide economic, environmental and social benefits'. The Benguela Current Commission is the first multilateral Commission in the world to be based on the Large Marine Ecosystem approach to ocean governance.

Notwithstanding these achievements, climate change and variability impacts have not yet been addressed in a concrete manner. Although the region has benefited from extensive research on the biophysical and biological conditions of the Benguela Current system, there is limited knowledge understanding of the impacts of climate change and the vulnerability of fisheries and fishery dependent communities. This is one of the key barriers to concrete adaptation in the fisheries sectors.

This project, "Enhancing Climate Change Resilience in the Benguela Current Fisheries System", is a combined effort by the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build

resilience and reduce the vulnerability to climate variability and change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security.

The project has been structured into three interlinked technical components:

- Component 1 which aims to ensure that national and regional policies and plans give due consideration, including well defined actions, to the likely implications of climate change and variability;
- Component 2 to put adaptation actions into practice in selected highly vulnerable fisheries and communities in order to bring about measurable improvements in the pilots and to learn lessons for application on a wider scale; and
- Component 3 to increase both awareness and capacity to enable and promote a proactive, forward-looking approach to climate change.

These three components will be supported by a cross-cutting monitoring and evaluation and adaptation learning component (Component 4). The component will ensure a systematic monitoring and evaluation of progress towards the achievement of the objectives. It also serves to promote the wider dissemination of results for replication in other large marine ecosystems.

The project will be executed through the regional body, the Benguela Current Commission. At national level, respective fisheries and mariculture government departments and environmental ministries will be the key project partners and will share the responsibilities for the execution of national activities with the Benguela Current Commission. FAO will be the GEF Agency responsible for the supervision and provision of technical guidance during the implementation of the project.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	II
GLOSSARY OF ACRONYMS.....	VI
SECTION 1 - RELEVANCE.....	1
1.1 General context	1
1.1.1 General development context related to the project.....	1
1.1.2 Threats to the Benguela Current Large Marine Ecosystem	3
1.1.3 Legal, policy and institutional context	5
1.2 Rationale	9
1.2.1 Baseline programmes and co-financing	9
1.2.2 Barriers to addressing climate change vulnerabilities.....	11
1.2.3 Additional reasoning (added value of the LDCF/SCCF financing)	12
1.3 FAO's comparative advantage	15
1.4 Participants and other stakeholders.....	17
1.5 Lessons learned from past and related work, including evaluations	20
1.6 Links to national development goals, strategies, plans, policy and legislation, LDCF/SCCF and FAO's Strategic Objectives	22
SECTION 2 - PROJECT FRAMEWORK AND EXPECTED RESULTS	25
2.1 Project strategy	25
2.2 Project objectives	26
2.3 Project components.....	26
2.4 Adaptation benefits.....	37
2.5 Cost effectiveness	37
2.6 Innovativeness	38
SECTION 3 - FEASIBILITY	40
3.1 Environmental impact assessment	40
3.2 Risk Management	40
3.3 Fiduciary risk analysis and mitigation measures.....	41
SECTION 4 - IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS	42
4.1 Institutional arrangements.....	42
4.2 Implementation arrangements	42
4.3 Financial plan.....	47
4.3.1 Financial plan (by component, outputs and co-financier).....	47
4.3.2 GEF/LDCF/SCCF inputs	49
4.3.3 Government inputs	49
4.3.4 FAO inputs	49
4.3.5 Other co-financiers inputs.....	50
4.4 Financial management and reporting on LDCF/SCCF resources	50
4.5 Procurement.....	52
4.6 Oversight, monitoring and evaluation and reporting.....	53
Table 4.2 Monitoring and evaluation plan summary	54
4.6.3 Indicators and information sources	55
4.6.4 Reporting schedule	56
4.7 Provision for evaluations.....	57
4.8 Communication and visibility	58
4.9 Coordination with ongoing and other planned activities	58

SECTION 5 – SUSTAINABILITY OF RESULTS	61
5.1 Social sustainability	61
5.2 Environmental sustainability.....	62
5.3 Financial and economic sustainability	63
5.4 Sustainability of capacities developed.....	64
5.5 Appropriateness of technology introduced.....	64
5.6 Replicability and scaling up	65
 APPENDICES	 67
 APPENDIX 1: RESULTS MATRIX	 68
 APPENDIX 2: WORK PLAN.....	 79
 APPENDIX 3: RESULTS BUDGET	 88
 APPENDIX 4: RISK MATRIX.....	 101
 APPENDIX 5: PROCUREMENT PLAN TEMPLATE	 102
 APPENDIX 6: TERMS OF REFERENCE (TORS)	 103
 APPENDIX 7: NATIONAL POLICIES AND AGREEMENTS RELEVANT TO THE PROJECT	 119
 APPENDIX 8: PROJECTS UNDER THE FIRST BCC SCIENCE PROGRAM (2009-2014)..	 123

GLOSSARY OF ACRONYMS

ASCLME	Agulhas Current Large Marine Ecosystem
AMAT	Adaptation Monitoring and Assessment Tool
AWP/B	Annual Work Plan and Budget
BCC	Benguela Current Commission
BCLME	Benguela Current Large Marine Ecosystem
BENEFIT	Benguela Environment Fisheries Interaction and Training
BH	Budget Holder
CBD	Convention on Biological Diversity
CBO	Community-based Organization
CCA	Climate Change Adaptation
CEO	Chief Executing Officer (GEF)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	Conference of the Parties
CSIR	Council for Scientific Research (South Africa)
CSO	Civil Society Organization
CTA	Chief Technical Advisor
CV	Curriculum Vitae
DAFF	Department of Agriculture, Forestry and Fisheries (South Africa)
DEA	Department of Environmental Affairs of South Africa
DRFN	Desert Research Foundation of Namibia
DNP	Ministry of Agriculture of Angola
DRM	Disaster Risk Management
EAF/A	Ecosystem approach to fisheries/aquaculture
EEZ	Exclusive economic zone
EIA	Environmental Impact Assessment
ENSAR	National Strategy on Food and Nutritional Security of Angola
EP	Executing Partner
ERA	Ecosystem Risk Assessment
ES	Executive Secretary
FAO	Food and Agriculture Organization of the United Nations
FE	Final Evaluation
FIP	Fisheries and Aquaculture Policy and Economics Division of the FAO
FPMIS	FAO Field Project Management Information System
GDP	Gross Domestic Product
GEBs	Global Environmental Benefits
GEF	Global Environment Facility
GEFSEC	GEF Secretariat
GIZ	German Society for International Cooperation
HNS 96	Convention on Hazardous and Noxious Substances
IGO	Intergovernmental Organization
IIMS	International Institute of Marine Surveying
IKI	International Climate Initiative
INAMET	National Institute of Meteorology and Geophysics of Angola
INIP	Instituto Nacional de Investigação Pesqueira/National Fishing Research Institute (Angola)
IPA	Instituto de Desenvolvimento da Pesca Artesanal/The Institute for the Development of Artisanal and Aquaculture Fisheries (Angola)
IPCC	Intergovernmental Panel on Climate Change
LDCF/SCCF	Least Developed Countries Fund/Special Climate Change Fund
LME	Large Marine Ecosystem
LTO	Lead Technical Officer
LTU	Lead Technical Unit

M&E	Monitoring and Evaluation
MARPOL	International Convention for the Prevention of Pollution from Ships
MCS	Monitoring, Control and Surveillance System
MET	Ministry of Environment and Tourism (Namibia)
METT	Monitoring Evaluation Tracking Tools
MFMR	Ministry of Fisheries and Marine Resources (Namibia)
MLRA	Marine Living Resources Act
MME	Ministry of Mines and Energy of Namibia
MoUs	Memoranda of Understanding
MPA	Marine Protected Area
MTE	Mid-Term Evaluation
MWT	Ministry of Works and Transport of Namibia
NACOMA	Namibia Coast Conservation and Management Project
NAMCOR	National Petroleum Corporation of Namibia
NAMFI	Namibia Maritime and Fisheries Institute
NAMPORT	Namibia Port Authorities
NAPA	National Adaptation Programme of Action (Angola)
NCCP	National Policy on Climate Change for Namibia
NCCRP	National Climate Change Response Policy of South Africa
NEPAD	New Partnership for Africa's Development
NEX	National Execution
NFFP	NEPAD-Agency-FAO joint fisheries programme
NGO	Non-governmental Organization
NNF	Namibia Nature Foundation
NORAD	Norwegian Agency for Development Cooperation
NPC	National Planning Commission of Namibia
NTB	Namibia Tourism Board
PaCFA	Partnership for Climate, Fisheries and Aquaculture
PC	Project Coordinator
PIF	Project Identification Form (GEF)
PIR	Project Implementation Review
PIU	Project Implementation Unit
POPs	Persistent Organic Pollutants
PMU	Project management Unit
PPG	Project Preparation Grant (GEF)
PPR	Project Progress Report
PRODOC	Project Document
PSC	Project Steering Committee
PY	Project Year
RBM	Results-based-management
REC	Regional Economic Community
RFB	Regional Fisheries bodies
SADC	Southern African Development Community
SAP IMP	Strategic Action Plan Implementation
SAWB	South African Weather Service
SIDA	Swedish International Development Cooperation Agency
SO	Strategic Objectives (FAO)
SSFP	Small scale fisheries sector in South Africa
STAP	Scientific and Technical Advisory Panel
TAC	Total Allowable Catch
TCI	Investment Centre Division (FAO)
TCP	Technical Cooperation Programme (FAO)
TOR	Terms of Reference
UNAM	University of Namibia
UNCLOS	United Nations Convention on the Law of the Sea

UNDAF	United Nations Development Assistance Framework
UNFCCC	United Nations Framework Convention on Climate Change
VA	Vulnerability Assessment
VMS	Vessel Monitoring System
WWF	World Wildlife Foundation

SECTION 1 - RELEVANCE

1.1 General context

1.1.1 General development context related to the project

The Benguela Current Large Marine Ecosystem (BCLME) extends from Angola's Cabinda Province in the north to just east of Port Elizabeth in South Africa, lying between about 14° S and 37° S and east of the 0° meridian. It includes an extensive coastal upwelling regime, frontal jets and the eastern part of the South Atlantic gyre (Figure 1)¹ and is one of the most productive marine areas in the world. Mean annual primary production has been estimated to be greater than 300 gC.m⁻².y⁻¹ and the system can be classified as a Class I highly productive ecosystem. This in turn results in high productivity at the higher trophic levels including fishery resources and dependent predators.²

The coastline along the length of the BCLME consists mainly of arid or semi-arid environments with higher rainfall occurring only in the most northern and southern regions. Much of the length of the coast is marked by an escarpment inland, which rises to the plateau that dominates much of the interior of southern Africa. High wave energy is a feature of most of the coastline, affected by swells from the Southern Ocean.² The BCLME can be divided into three sub-ecosystems on the basis of oceanography and the nature of the ecosystems. The most northerly part, from approximately Lobito in southern Angola to the Cabinda Province, is characterised by warmer water with relatively low nutrient concentrations, which result in lower fisheries production. The northern Benguela ecosystem, from Lobito southwards to the upwelling zone near Luderitz in Namibia (Figure 1), is a productive upwelling system similar to much of the southern Benguela but functionally largely separated from it by the intense upwelling zone around Luderitz. The southern Benguela, extending from Luderitz to East London in South Africa, is heavily influenced by upwelling along the South African west coast and is also very productive, with many species in common with the northern Benguela.

The abundance and productivity of the marine living resources in the system provide the resource base for important and diverse fisheries, ranging in scale from subsistence to large-scale commercial activities and contributing to local food security and employment for hundreds of thousands of people, many of who have no or limited alternatives. The relative importance of the fisheries sector differs between the three countries but is an essential contributor to social well-being and economies at national and local scale in all of them.

In **Namibia**, the fisheries sector ranks third, after agriculture and mining in terms of economic value and has generated about 5% of the national gross domestic product (GDP) in recent years. The 2010/2011 Annual Report of the Namibian Ministry of Fisheries and Marine Resources reports that during the period 2010/11, 199 vessels were licensed to fish within the exclusive economic zone (EEZ) of Namibia. Moreover, the total catch in 2010 of all species under quota control was over 340 000 tonnes, which was about 11% less than the total catch of the previous year. The landed value of the catch in 2010 was approximately NAD 3.75 billion (equivalent to nearly approximately USD 500 million at the time) and the final value at ex-factory prices was just over NAD 4 billion. Fisheries are also an important source of employment in Namibia and recent estimates indicate that a total of

¹ Hampton, I. 2012. Vulnerability to climate change of the Benguela Current Large Marine Ecosystem and the human livelihoods dependent on it. In: De Young, C., Hjort, A., Sheridan, S. & Davies, S. Climate change implications for fisheries of the Benguela Current region – Making the best of change. FAO/Benguela Current Commission Workshop, 1–3 November 2011, Windhoek, Namibia. FAO Fisheries and Aquaculture Proceedings. No. 27. Rome, FAO. 2012. Pp25-78.

² UNDP, 2008

approximately 15 000 people are employed, of whom about 7,500 are fishers. The fisheries in Namibia are almost exclusively commercial or recreational as the arid and inhospitable environment of much of the coastline has prevented the development of an artisanal fishery in the country. In 2005, total mariculture production was 302 tonnes, consisting mainly of oysters produced in Walvis Bay, Swakopmund and Luderitz³. Namibia has adopted a strategic action plan to develop the aquaculture sector into a thriving industry consisting of extensive and semi-intensive aquaculture to generate food, income and employment for rural communities as well as high-value, export-oriented production⁴.

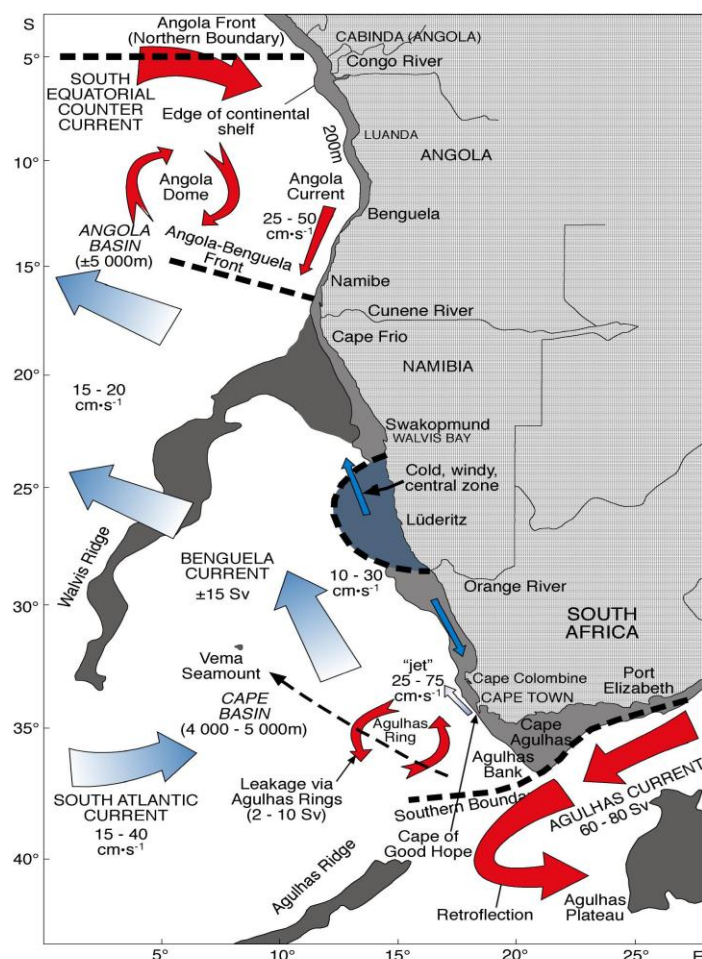


Figure 1: The BCLME region showing the southern and northern boundaries and other large oceanographic features⁵

The fishing sector in **South Africa** employs a total of about 26 000 people, including sea-going personnel and those who work on land. The fisheries catch taken by full commercial rights holders in 2008, making up the bulk of the country's total catch, was just over 442 000 tonnes and the total

³ FAO. 2007. Fishery Country Profile: Namibia. FAO, Rome. http://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_NA.pdf accessed on 27/03/2014.

⁴ MFMR. 2004. Government's VISION 2030, quoted in Namibia's Aquaculture Strategic Plan. MFMR, Windhoek. 34pp.

⁵ UNDP. 2008. United Nations Development Programme Implementation of the Benguela Current LME Strategic Action Programme for Restoring Depleted Fisheries and Reducing Coastal Resources Degradation. UNDP Project Document. Governments of Angola, Namibia, South Africa. 141pp

value of the catch taken was approximately ZAR 4.2 billion,⁶ equivalent to approximately USD 540 million at that time. Nationally, the fishing industry is only a small part of the economy and contributes less than 1% of the national GDP. However, it is important regionally and there are many coastal communities outside the main urban areas that are heavily dependent on fisheries for their livelihoods. Fisheries in the country vary from subsistence to large-scale commercial, with small-scale traditional fishers making up a significant proportion of the total. Aquaculture, including mariculture, is still under-developed in South Africa and is dominated by production of high value species. The sector, including freshwater production, employs about 1 850 people and, as of 2012, produced about 3 500 t with a total value of about ZAR 218 million. The government has estimated that production can be increased approximately 10-fold and is attempting to promote and facilitate the growth of the sector⁷.

The productivity of **Angola's** EEZ varies considerably along the length of the country. The southern zone, extending from the mouth of the Cunene River on the Angola-Namibian border to Lobito, is the most productive area and is characterized by many of the same species found in the upwelling zones of Namibia and South Africa. The central zone, extending from Benguela in the south to Luanda, is less productive and the fish catches are dominated by sardinellas, the Cunene horse mackerel and demersal species, as is the northern zone from Luanda to Cabinda. The fisheries sector in Angola ranks third in economic importance, following the oil and diamond mining sectors. Fisheries are also important as providers of employment in the country and for food security: the sector is the source of nearly 50% of the animal protein consumed by the Angolan human population. The domestic consumption of fish in Angola is high and, at an estimated 15.7 kg per person per annum, as of 2007,⁸ is one of the highest in the region. Total catches in 2003 were approximately 220 000 tonnes and the estimated value of the fish that were exported from the country was USD 61.5 million.⁷ Formal employment in the sector in 2004 was estimated at 31 000 people but there are 102 fishing communities along the Angolan coast and there are thought to be between 130 000 and 140 000 people who are involved in coastal artisanal fishing in the country.⁹ Mariculture is still in its infancy in Angola but there is considerable potential for culturing shellfish, crustaceans, fish, and algae in the coastal zone. Some of the constraints to development have included a general lack of expertise on aquaculture development and management, lack of quality fingerlings and quality feed, and poor knowledge of fish farming. Angola has set development of aquaculture as a high priority to help improve domestic fish supply, create employment, reduce malnutrition, food insecurity and poverty.¹⁰

1.1.2 Threats to the Benguela Current Large Marine Ecosystem

The fisheries sectors in the three countries are facing a number of serious challenges to ensuring sustainable use of the productive but vulnerable marine resources that support them. These include:

⁶ DAFF. 2009/2010 Performance review of fishing right holders. Overall report summary: limited commercial and full commercial rights holders. Department of Agriculture, Forestry and Fisheries, South Africa; 2012. 89pp. Available at <http://www.nda.agric.za/daDev/fisheries/13_PerformanceReviews/Overall%20Report-Summary%20-F.P.Reviews%20-%202012-04-30%20-%20For%20web%20publishing.pdf>.

⁷ DAFF. 2012. Strategic Plan 2012/13-2016/17 for the Department of Agriculture, Forestry and Fisheries. DAFF, Pretoria. 108pp. <http://www.nda.agric.za/daDev/topMenu/StratPlan201213-201617.pdf> accessed on 27/03/2014.

⁸ FAO Fishery Country Profile. Angola. ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_AO.pdf

⁹ Cardoso, P., Agostinho, D. and M. Sowman. 2006. Socio-economic baseline survey of coastal communities in the BCLME Region – Angola: Final report. Report prepared for Benguela Current Large Marine Ecosystem (BCLME) Activity Centre for Marine Living Resources, Swakopmund, Namibia.

¹⁰ FAO. 2014. Draft project document: Technical support for spatial planning of aquaculture zones in the Republic Angola. Unpublished document, Fisheries and Aquaculture Department, FAO, Rome. 21pp.

1) **Over-exploitation of many of the marine resources by fisheries.** This not only reduces the productivity and the resilience of those resources, it also affects the status and resilience of other species directly dependent on those resources and have impacts on the ecological integrity and resilience of the ecosystem. Such loss of integrity has already been observed in the northern Benguela which has experienced a shift to a less productive state. After supporting productive fisheries for sardine and anchovy in the 1960s and 1970s, this ecosystem currently appears to be dominated by horse mackerel, gobies and jelly fish, ⁸ the last two of which are of negligible commercial importance and relatively low value as food sources in the ecosystem. Overfishing was almost certainly a contributory factor in that shift. Decreased productivity of fishery resources impacts on the livelihoods and, in some small-scale communities, the food security of those dependent on fisheries and leads to a reduction in the economic returns from commercial fisheries at national and regional scale.

2) **Habitat loss and pollution.** Impacts from other sectors on the Benguela Current ecosystem and on the fisheries social-ecological systems are a further problem that needs to be addressed. Dumping of industrial waste and accidental oil spills have occurred within the region and can be disruptive to the ecosystem, poisoning marine resources and decreasing the resilience of the system to variability and change. Direct impacts on seabirds from oil spills and other polluting events are an important concern in the region. The region is developing economically, with the inevitable trend towards urbanization that this brings. Coastal developments, unless responsibly and sensitively planned and implemented, can damage or destroy key coastal habitats with negative impacts on inshore marine species, seabirds and other taxonomic groups. Coastal and marine seabed mining and extraction of oil and gas are growing sectors in all three countries that impact the ecosystem and that also need to be carefully planned and regulated to avoid undesirable impacts on the ecosystems and on the fishery systems.

3) **Climate variability and change.** The major part of the BCLME is driven mainly by upwelling and is therefore naturally highly variable throughout much of the ecosystem. This variability in itself makes sustainable use of the living marine resources more of a challenge and it also makes it more difficult to discern distinct long-term trends. Nevertheless, there have been important changes, the most marked of which are the extensive warming of sea surface waters at both the northern and southern boundaries of the system in recent decades. There have also been indications during the same period of cooling in the inshore areas along the west and south coasts of South Africa, which may be a result of increases in the winds that generate upwelling. These changes have also been associated with an increased frequency in the incidence of Benguela Niños and other such intrusions of warm, nutrient-poor water from southern Angola, widespread declines in oxygen concentration, and sea level rise.¹¹ A particular concern is the increase in the leakage of Agulhas current water into the south-east Atlantic in the past decade. This is considered to be driven by climate change and could have far-reaching effects on the entire Benguela upwelling region.

In addition to these physical changes, there have been marked changes in distribution of some species of importance to fisheries. The distribution of the dusky kob *Argyrosomus coronus*, a socially and economically important fish species in northern Namibia and southern Angola, has been found to be shifting to the south, almost certainly as a result of increasing temperatures. If this continues, it will have negative consequences for coastal fishing communities in southern Angola while Namibian

¹¹ De Young, C., Hjort, A., Sheridan, S. & Davies, S. Climate change implications for fisheries of the Benguela Current region – Making the best of change. FAO/Benguela Current Commission Workshop, 1–3 November 2011, Windhoek, Namibia. FAO Fisheries and Aquaculture Proceedings. No. 27. Rome, FAO. 2012. 125 pp. <http://www.fao.org/docrep/017/i3053e/i3053e.pdf>

coastal and recreational fisheries could benefit from greater abundance of the species and hence higher catches. South Africa has also experienced changes in the form of eastward shifts in the distribution of West Coast rock lobster, sardine and anchovy. All these species are socially and economically important inshore fishery resources and the shifts have resulted in hardship and disruption in the fisheries and communities in affected areas. In Namibia, the declines in some fish stocks that have been experienced in recent years may be related to the trend of increasing warmer sea surface temperatures in the northern Benguela ecosystem.⁸

There is also the possibility that biophysical changes associated with climate change may lead to an increase in upwelling-favourable winds in the southern Benguela. This could increase primary production, with positive consequences for food availability for sardine and anchovy, but result in increased offshore loss by advection of eggs and larvae off the Cape Peninsula while being transported from the spawning grounds on the Western Agulhas bank to the nursery grounds on the West Coast. Increased temperatures in the euphotic zone could enhance primary and secondary production rates leading to faster growth rates of pelagic fish but also result in a shift in spawning grounds to less favourable areas and times. Increases in the incidence of low oxygen water on the northern Benguela shelf could have negative effects on recruitment in both species of hake but, by changing the distribution of both species and the degree of overlap between them, also lead to a reduction in the currently high rate of predation of *M. capensis* on *M. paradoxus*. Species replacements are also likely if, for example, there are large reductions in the biomass of one or more species of pelagic fish. This has been observed before in the BCLME in the last five or six decades, including replacement of horse mackerel by sardine, which was then replaced by anchovy in the southern Benguela in the 1950s and 1960s, and the replacement of sardine by anchovy in the northern Benguela in the 1970s.

A preliminary vulnerability assessment¹² undertaken as a part of the preparation for this project concluded that the small-scale and artisanal fisheries tend to be the most vulnerable to environmental change and variability. These fisheries engage a large number of people who are heavily dependent on fisheries and marine resources for their livelihoods. Many live in conditions of poverty and most have very little ability to adapt to reduced catches and catch rates. Fisheries falling within this group are mainly the extensive artisanal and semi- industrial pelagic fisheries in Angola and those fishing for West Coast rock lobster and various line fisheries in South Africa, and some in Namibia. Amongst the larger-scale commercial fisheries, the South African small pelagic fishery was found to be particularly vulnerable because of a combination of high economic and social value and sensitivity to climate change and variability, including the threat of possible major perturbations in the Agulhas current. The Namibian small pelagic fishery is also likely to be highly vulnerable but, following major declines in the abundance of sardine and anchovy in the second half of last century, has much lower social and economic value. The valuable demersal trawl fisheries for hake and other demersal species in the Benguela region appear to be less vulnerable to climate change because of likely lower sensitivity to environmental perturbations and the ability to adapt if they should occur.¹³

1.1.3 Legal, policy and institutional context

¹² Hampton, I. 2011 Vulnerability to climate change of the Benguela Current Large Marine Ecosystem and the human livelihoods dependent on it. In: De Young, C., Hjort, A., Sheridan, S. & Davies, S. Climate change implications for fisheries of the Benguela Current region – Making the best of change. FAO/Benguela Current Commission Workshop, 1–3 November 2011, Windhoek, Namibia. FAO Fisheries and Aquaculture Proceedings. No. 27. Rome, FAO. 2012. 125 pp. Available at <http://www.fao.org/docrep/017/i3053e/i3053e.pdf>

¹³ Ibid.

Regional level

The Governments of Angola, Namibia and South Africa signed the Benguela Current Convention in 2013. The Convention is one of the key results that followed two decades of research, institutional and human capacity strengthening and cooperation between the three countries. It provides the overarching legal framework for the use of, and access to the BCLME and sets out the countries' intention to 'promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits.'

The Convention has also made permanent the intergovernmental Benguela Current Commission (BCC), which has been in existence since 2007. The BCC is the first multilateral Commission in the world to be based on the Large Marine Ecosystem (LME) approach to ocean governance. The BCC has a mandate and responsibility for coordinating activities related to cross-sectoral and ecosystem-wide management of the shared marine resources of the region, including undertaking relevant research. The BCC works with national authorities in the three member countries responsible for key sectors using and impacting on the marine environment. It has been established to achieve regionally defined objectives related to, amongst others, fisheries utilization and management, conservation of marine biodiversity, minimizing and correcting environmental impacts from activities such as marine prospecting, mining and dredging and the exploration and development of oil and gas fields, and others, as outlined in the Convention and the Strategic Action Programme (SAP).

The Benguela region falls within the Southern African Development Community (SADC) and the member countries of BCC are all also members of SADC. The Benguela Current Convention explicitly refers to the Community in paragraph (j) of Article 8 Functions of the Commission where one of the BCC's functions is to 'promote collaboration on monitoring, control and surveillance, including joint activities in the Southern African Development Community region'. SADC is addressing climate change and the Sub-Regional Framework places an emphasis on adaptation actions to address the impacts of climate change on all climate-sensitive sectors, including coastal zones, fisheries, biodiversity and environment. It is significant for this project that the Framework refers to the need for SADC to establish agreements with other partners on 'technology transfer, capacity building and information sharing, strengthening policy, institutional and regulatory frameworks and enforcement of international rules and regulations'¹⁴. In the same context it also expresses concern that degradation of coastal fishery resources is affecting the availability of protein to local communities. There will clearly be considerable benefit in strengthening the links between BCC and SADC in their common efforts to promote adaptation and increase resilience to climate change in the region's coastal fishery systems.

National level

All BCLME coastal countries have structures and institutions for governance, management and development of their national fisheries. All of the countries have recently developed fisheries legislation. Angola has maintained up-to-date legislative frameworks and adopted new fisheries statutes in 2000 and again in 2004. The Marine Resources Act of Namibia was promulgated in 2000, while Namibia also adopted legislation on aquaculture and inland fisheries in 2002 and 2003, respectively. The Marine Living Resources Act (MLRA) was adopted by South Africa and underwent minor revision in 2014 in order to allow for the implementation of the Policy for the Small Scale Fisheries Sector in South Africa (2013). The National Aquaculture Framework for South Africa was

¹⁴ SADC. 2010. Southern Africa Sub-regional Framework of Climate Change Programmes -Adaptation and Mitigation Actions, Supported by Enabling measures of Implementation. Available at www.sadc.int

adopted in 2013. The existing legislation in the three countries are all essentially compatible and of similar approaches.

Angola adopted the Law on Aquatic Biological Resources in 1994, which superseded the 1992 Fisheries Law. The Law on Aquatic Biological Resources has established new principles and provisions related to the sustainable management of aquatic resources, and also reflects the need to integrate the management of marine resources with other sectoral policies and legislation. The principal objectives of this new law include 1) rational exploitation of marine resources within biological sustainable limits; 2) improvements in food security; 3) improvements in livelihoods and reduction in levels of poverty within communities dependent on fishing activities; 4) increased capture of foreign revenue to support sectoral improvements; 5) improvements in MCS; and 6) implementation of sectoral training programmes for better handling and management. In particular, new regulations regarding surveillance, research and licensing have been drafted to further support this new law.

The Angolan government has recently released a new long-term development strategy – the National Development Plan 2013-2017 – which prioritizes Environment and Energy as one of its core directives, with the aim of developing capacity for sustainable management of resources. In terms of broad-based environmental governance, the Environmental Framework Law (1998) provides the guiding principles according to which all new environmental policies and acts are developed (including environmental impact assessment requirements). In 2011 the Ministry of Environment designed a National Adaptation Programme of Action (NAPA) under the United Nations Framework Convention on Climate Change. This programme of action identified the fisheries and agriculture sectors as one of the national adaptation priorities and has detailed sections that consider the potential climate change impacts and analysis of the threats and vulnerabilities. The goal of this programme of action is to mainstream environmental issues and climate change risks within national development planning and strategies.

In Angola, fisheries and marine resources are managed by the Angolan Ministry of Agriculture, Rural Development and Fisheries, though the Department of Fisheries and Aquaculture. The National Institute of Fisheries Research (INIP) (*Instituto Nacional de Investigação Pesqueira*) conducts marine and fisheries research and capacitates government through technical and scientific expertise. The Institute for the Development of Artisanal Fisheries and Aquaculture (IPA) (*Instituto de Desenvolvimento da Pesca Artesanal*) is responsible for promoting the development of small scale fisheries through the creation of cooperatives, knowledge sharing and the provision of credit facilities.

Namibia's overarching development framework, Vision 2030, places significant emphasis on the contribution of fisheries to the national economy, while noting the threat of climate-related impacts on marine ecosystems. Fisheries have also been highlighted through the country's National Development Planning framework (comprising 5-year National Development Plans (NDPs), most recently NDP4 for the period 2012/2013-2016/2017. Namibia published the National Policy on Climate Change for Namibia (NCCP) in 2011. A National Climate Change Strategy and Action Plan (2013-2020) has also been developed and is in its final stages of approval. The policy recognizes the vulnerability of Namibia to climate change due to its geographic location and its variable climatic patterns as well as its socio-economic status. Consequently, the NCCP is structured around three strategic aims – adaptation, mitigation and cross-cutting issues, such as those of capacity-building, training and institutional strengthening. The Ministry of Environment and Tourism (MET) also prioritizes climate change adaptation activities especially that of raising public awareness about climate change. In terms of environmental management, Namibia has a comprehensive Environmental Management Act (2007), supported by a range of policy frameworks, regulations and permits as well as a National Biodiversity Strategy and Action Plan that targets the conservation and sustainable use of Namibia's aquatic and terrestrial biodiversity. The National Policy on Coastal Management of Namibia was launched in 2013 and addresses a range of issues related to

ecosystems and coastal development, including the need to adopt measures that “seek to build resilience, particularly with respect to climate variability and environmental change....”.

The fisheries sector in Namibia is managed by the Ministry of Fisheries and Marine Resources (MFMR). At Independence in 1990, a 200 nautical mile Exclusive Economic Zone (EEZ) was established, followed by the promulgation of a new Sea Fisheries Act in 1992, and the introduction of a new national policy on exploitation rights and quota allocation in 1993. The Marine Resources Act of 2000 replaced the Sea Fisheries Act (1992) and is implemented through a contemporary regulatory framework and associated resources. The MFMR has a high profile in the country and is advised by the Sea Fisheries Advisory Council on matters relating to management and conservation. As well as embracing national responsibilities and commitments to fisheries management and sustainability as a high priority, Namibia has also been closely involved in the coordination of the fisheries sector within SADC. The country hosted the SADC Sector Coordinating Unit (SCU) for Marine Fisheries and Resources until the SCU system was disbanded during the SADC restructuring process, which was initiated in 2001.

The primary fisheries legislation in **South Africa** is the Marine Living Resources Act (MLRA, No.18 of 1998). The MLRA (1998), incorporates various social and environmental principles, including the need to achieve optimum utilisation and ecologically sustainable development of marine living resources, the need to conserve marine living resources for both present and future generations, the application of the precautionary approach, the need to protect the ecosystem as a whole, and the need to preserve marine biodiversity, amongst others. These principles, while not directly referencing climate change, provide a foundation for an approach that emphasises sustainability, adaptive management and resilience.

The MLRA Amendment Bill¹⁵ was developed in order to provide a legal framework for the implementation of the Policy for the Small-Scale Fisheries Sector in South Africa, which had been published in June 2012. The publication of the Small-Scale Fisheries Policy was an important landmark in the development of South Africa’s fisheries governance regime, as the small scale sector has historically been marginalized, resulting in significant concerns regarding social justice, socio-economic development and sustainability within the small-scale fisheries sector. The policy emphasises the critical role of small-scale fisheries in supporting job creation and livelihoods, as well as contributing to food security. With regards to climate change, the policy notes that the possible impacts of environmental and climate change on coastal communities form part of a range of challenges facing the sector, however, climate change is not addressed at any length.

While the MLRA Amendment Bill does not contain any direct references to climate change, it does establish the legal framework to more effectively integrate the small-scale fisheries sector within the broader fisheries governance regime. In this respect, the MLRA Amendment Bill will allow the Government to establish geographical zones for small-scale fisheries, employ a multi-species approach in the allocation of fishing rights, formally recognize small-scale fisheries communities and assign rights of access to them, and promote small-scale fisheries through recognition of fisheries cooperatives. The Bill further requires the Minister of Agriculture, Forestry and Fisheries and any organ of state to have regard to the need to incorporate a community-based approach in the allocation of rights of access within the small-scale fisheries sector. Taken together, these measures can contribute to the enhanced resilience of South Africa’s small scale fisheries sector.

In 2000 the South African Department of Environment and Tourism published a White Paper for Sustainable Coastal Development in South Africa. This policy document called for a new approach to the management of South Africa’s coastal resources; in particular, the policy advocated for a shift in

¹⁵ http://jutralaw.co.za/media/filestore/2013/11/B30B_2013.pdf

emphasis to a greater recognition of the value of the coast, a people-centred approach to coastal management, an emphasis on sustainable coastal development, and the promotion of co-ordinated and integrated coastal management. The White Paper sets out a number of policy goals and objectives. Under theme C: 'Coastal Planning and Development', the policy identifies the goal of planning and managing coastal development so as to avoid increasing the incidence and severity of natural hazards and avoiding exposure of people, property and economic activities to significant risk from dynamic coastal processes. Linked to this goal is the objective to take into account the potential consequences of medium- and long-term climate change and associated sea-level rise in all coastal planning and management.

The fisheries sector is managed by the Department of Agriculture, Forestry and Fisheries (DAFF). DAFF also contains a Climate Change and Disaster Management Directorate, which is responsible for coordinating elements of the sectoral climate change response strategies and disaster management planning of the three primary DAFF branches. South Africa's Department of Environmental Affairs (DEA) holds national-level responsibility for climate-related issues, and, through its Branch: Oceans and Coasts, manages various issues related to the marine environment that are also of relevance to fisheries management and climate change adaptation.

Generally, climate change issues are not currently well integrated in the fisheries legislation of BCLME countries, however, the legislative framework does support a precautionary, adaptive, ecosystems-based and sustainability-focused approach to fisheries management. Climate change policies in each of the BCLME countries recognize the risk of climate change to fisheries and marine ecosystems broadly, but adaption strategies for the fisheries sector are not well defined in these policies.

A detailed table of the Angolan, Namibian and South African policy context as well as the various environmental and fisheries agreements ratified by the three countries is provided in Appendix 7.

1.2 Rationale

1.2.1 Baseline programmes and co-financing

The baseline consists of past and ongoing programmes and projects, both at regional and national level. Some of these programmes including the BCLME programme and the SAP implementation projects implemented between 2002 and 2013 were co-financed by GEF. These programmes are important to highlight here because their results have provided an important foundation for ongoing and future work to address threats, including climate change, and barriers to the sustainable management of the BCLME.

a) Regional Level

BCLME programme. The objective of this programme was to establish and improve structures and capacities for the sustainable management of BCLME in a coordinated and integrated way. The BCLME Programme was able to generate knowledge on the status of the ecosystem which resulted in an acknowledgement by the governments of Angola, Namibia and South Africa that improvements in policy, legislation and management practices are required to guarantee the future sustainability of fisheries and the associated environment of the Benguela Current LME. The main outcomes of the programme were the establishment of the Interim Benguela Current Commission, a Transboundary Diagnostic Analysis (TDA) and the Strategic Action Programme (SAP).

SAP implementation project: The project facilitated the development and signature of the legally binding Benguela Current Convention and the institutionalization of the Commission. The project also contributed to strengthening the structure and capacity of the BCC, and the updating of the TDA and SAP. The new five-year SAP (2015-2019) that sets out a programme of activities for the next five years was approved and signed in August 2014.

Science programme. At the close of the BCLME Programme in 2008, the first BCC Science Programme was developed. Under this programme, more than 20 projects have been or are being implemented. These are funded by the Government of Norway, the European Union and other partners. See Appendix 8 for a list of these projects and their outputs. The first five years of the BCC Science Programme has focussed primarily on capacity building and research regarding biological and ecosystem surveys, stock assessments, and the implementation of the ecosystem approach to fisheries (EAF). The following projects within or related to the science programme will be part of the baseline co-financing for the project:

- The FAO/Norway EAF-Nansen Project is working with the BCC in the development of a tracking tool to monitor the implementation of an ecosystem approach to fisheries management; enhancing the integration of the human dimension of EAF into fisheries management and including the identification of appropriate institutional arrangements. The project will provide co-financing towards understanding the bio-physical impacts of climate variability and change in the Benguela system and linking these to an ecosystem approach to fisheries.
- ECOFISH is a six-year (2011-2016) project supported by the European Commission and coordinated by the BCC with participation by scientists and fisheries managers in the three countries and specialists from the Technical University of Denmark. Its overall aim is to develop a new framework for the ecosystem approach to fisheries (EAF) in the Benguela Current Large Marine Ecosystem (BCLME). This project will provide co-financing as a contribution to improving knowledge of basic ecosystem processes, improving the assessment of fish stocks, and involving stakeholders in the management of Benguela fisheries, complementing the work taking place in the FAO/Norway EAF-Nansen Project .
- The 'Global learning for local solutions: Reducing vulnerability of marine-dependent coastal communities' (GULLS) project under the Belmont Forum and G8 Research Councils Initiative on Multilateral Research Funding is undertaking trans-disciplinary, integrated assessments of vulnerability to climate change of coastal communities in five 'hot-spot' study areas in the southern hemisphere, including selected coastal communities and the small pelagics fishery in South Africa. Through a comparative and participatory approach the project aims to provide capacity-building, create greater awareness of climate change and assist coastal communities in adaptation to climate change and climate variability. It is scheduled to run from 2013 to 2016. The South African component of this project, funded primarily by the National Research Foundation of South Africa, will be addressing the southern Benguela ecosystem and will thus complement the proposed project.

b) National level

Angola. The Government of Angola is implementing a number of actions to support development of sustainable artisanal marine fisheries and aquaculture in inland water bodies. With financing from the African Development Bank, the Government has created 10 Artisanal Fisheries Support Centres along the marine coast and will construct 4 and rehabilitate 2 artisanal fish landing sites/centres to reduce post-harvest losses and improve access to markets. In total, 16 landing sites will receive assistance with respect to fishery resource and fishery infrastructure management. In addition, the Monitoring, Control and Surveillance (MCS) system and the fisheries statistical system for improving the sustainable management of Angolan fisheries are being reinforced.

Namibia. The regular programme of the Ministry of Fisheries and Marine Resources includes regular assessments to determine status and trends of the major commercially important stocks, which are used as the basis for setting total allowable catch (TACs), and other management regulations. It has implemented a Monthly Oceanographic Monitoring programme through which data on marine oxygen, temperature and other important parameters are collected. A shellfish monitoring and

sanitation programme has also been implemented in order to monitor and manage harmful algal blooms in areas where mariculture is taking place. The government is implementing a value addition, employment and marketing policy through the recent development of 25 fish processing facilities and market expansion efforts.

South Africa. Under the strategic programme for the Department of Agriculture, Forestry and Fisheries (DAFF), over the next five years South African fisheries management will continue to conduct fishery-specific research to inform the setting of total allowable catches and effort in 22 fisheries; will implement a stock recovery strategy for 4 major species; will implement the small-scale fisheries policy; encourage the development of and broaden the scope of the aquaculture sector; develop and implement a stakeholder engagement strategy; develop and finalize a fisheries charter; develop and implement the Integrated Fisheries Security Strategy to ensure better compliance, monitoring and enforcement efforts; and promote job creation and sustainable economic livelihoods.

The baseline programmes have and are contributing much towards improving the management of the BCLME and the development of the fisheries sectors in the countries. However, as stated in the updated SAP, there is a big gap on knowledge and understanding of the impacts of climate change on the ecosystem. Although the region has benefitted from extensive research on the bio-physical and biological conditions of the Benguela Current system, relatively little focus has been placed on the implications of climate variability and change on food and livelihood security of the communities dependent on this system and how decision-making, fisheries management and investment plans need to incorporate the additional uncertainty and change to support the system's resilience and contributions to well-being. The net result is that the countries are not responding adequately to changes that are already taking place and are poorly prepared for the change still to come.

1.2.2 Barriers to addressing climate change vulnerabilities

Key barriers to increasing resilience and reducing vulnerability to climate impacts include:

Barrier 1: Limited knowledge and understanding of the impacts of climate change on marine ecosystems and the vulnerability of coastal populations to climate change.

There is limited knowledge and understanding of the impacts of climate change on the fisheries systems of the region and the implications those have for the ecosystem itself and those whose livelihoods centre on the fishery resources of the ecosystem. Some preliminary studies have been undertaken, e.g. through the NansClim "Climate effects on biodiversity, abundance and distribution of marine organisms" project, but the region lags far behind many other countries and regions in scientific knowledge and the priority being given to increasing knowledge and predictive ability.

A further fundamental barrier to adaptation and reducing vulnerability is the lack of detailed knowledge of the vulnerability of the coastal populations to climate change, in particular the fishery-dependent communities, and the actions required to reduce that vulnerability. Without that information it is impossible to make meaningful and widespread progress in adaptation to climate threats and risks.

Barrier 2: Widespread lack of awareness of the risks of climate change

At the policy and scientific levels, the Benguela countries are aware of the threat, and possible opportunities, of climate change and variability and some actions have been taken at these levels. However, even within those two groups acknowledgement of the importance of ensuring resilience to future impacts varies considerably. Knowledge and awareness amongst other stakeholders, including those that have already been impacted and are likely to be further impacted, remains low or absent.

Barrier 3: Prevailing sectoral-based approaches to development and climate change

In common with many other countries and regions in the world, fragmented, sectoral based management and planning is the norm in the BCLME countries, typically leading to isolated, uncoordinated and therefore sub-optimal decisions and actions. The Benguela ecosystem and the lives and vulnerabilities of humans who make use of its services are affected by many different sectors and activities and any robust and long-lasting solutions to reducing vulnerability need to take all of those into account. This requires improved coordination and cooperation between all relevant sectors, government departments and stakeholders.

Barrier 4: Capacity constraints

Limited and frequently insufficient capacity to address climate change impacts and implement adaptation plans within the framework of an ecosystem approach is a further constraint that, unless addressed and improved, will form a serious barrier to progress. The lack of experience with and capacity to implement effective co-management is a particularly important aspect of the problem that needs to be addressed.

The means to address these constraints was agreed by participants from the three countries at a November 2011 regional workshop organized by the BCC on “Climate change implications for fisheries of the Benguela current region: making the best of change”¹⁶ and subsequently endorsed, with the addition of greater information and detail, at the three national workshops convened to plan the project. Those means can be summarised as:

- 1) Better understanding of the vulnerability of the human and aquatic systems to climate change and variability within the Benguela Current fisheries systems;
- 2) Coordinated and collaborative actions to decrease vulnerability of the human and aquatic systems and broader progress toward sustainable development in the Benguela Current fisheries systems;
- 3) Integrated and participatory processes to support the fisheries and aquaculture sectors to reach consensus on vulnerabilities and appropriate adaptation actions within national and regional climate change and development priorities and strategies;
- 4) Pilot projects to explore options and demonstrate best practices and tools that can be used for implementing practical actions for adaptation to climate-induced change;
- 5) Capacity building to support the participation of the Benguela Current fisheries and aquaculture sectors within national, regional and global climate change discussions and actions; and
- 6) Building on the existing political commitment and integrated institutional arrangements of the BCC, to facilitate and coordinate a regional programme on climate change adaptation in the BCLME region.

1.2.3 Additional reasoning (added value of the LDCF/SCCF financing)

The needs and challenges being addressed by the project are considerable and in order for it to make a difference and add to the existing, baseline activities in the region, the GEF resources will be invested in a way that complements them most effectively. This will be done in different ways for each component as follows.

Component 1: Integrating fisheries climate change considerations into fisheries policies and planning as well as into broader inter-sectoral development and climate change policies and programmes.

¹⁶ Climate change implications for fisheries of the Benguela Current region: making the best of change. FAO/Benguela Current Commission Workshop, 1–3 November 2011, Windhoek, Namibia. FAO Fisheries and Aquaculture Proceedings. No. 27, Rome, FAO, 2012.

Baseline scenario. As reflected in the national baseline activities described above, the three Governments are making efforts to ensure sustainable development of fisheries and mariculture in the region, within the framework of an ecosystem approach. These efforts include engagement with stakeholders, implementation of policies and plans that are intended to ensure optimal and responsible use of living marine resources to achieve national and local social, economic and environmental goals.

As mentioned in previous sections, climate change issues are not currently well integrated in the fisheries legislation of BCLME countries even though they broadly recognize the risk of climate change to fisheries and marine ecosystems. Without an improved understanding of the vulnerability of the BCLME including fisheries dependent communities, an opportunity to integrate well defined adaption strategies into a number of ongoing policy reform processes will be missed.

Adaptation alternative. Additional activities under component 1 will deal particularly with barriers 1 and 3. Activities will include detailed assessments of the vulnerability of those fisheries and communities that were identified during project preparation as likely to be the most vulnerable. This will provide, for the first time in the region, a rigorous and comprehensive overview of the current and anticipated impacts of climate change and variability on the fishery resources and on the dependent communities. The latter is currently very poorly understood and therefore the most urgent and significant. The additional funds will also be used to consider the actions required to address and adapt to the threats in a way that increases resilience and contributes to the sectoral and multi-sectoral national and local sustainable development goals. The supplementary value of the activities will also be in the form of ensuring that CC impacts on fisheries and mariculture are routinely and systematically taken into account, whenever significant, in all sectoral planning and implementation. This is not currently the case. It will also facilitate the steps and opportunities required to ensure that fisheries and mariculture are fully recognized and addressed within the existing mechanisms and structures that undertake planning and implementation for development, food security and climate change adaption in coastal areas. The activities undertaken in this Component and the information generated should catalyse significant changes in the perspectives and future priorities of all stakeholders, bringing about more integrated and strategic plans and actions than currently apply.

To develop the detailed vulnerability assessments, the project will use as much as possible, information generated under the BCLME science programme and other sources. These include: a Norad-funded NansClim project that has generated knowledge on trends in ocean climate and corresponding changes in marine biodiversity and fisheries in the Benguela current system; ECOFISH project supported by the European Commission which will provide information related to basic ecosystem processes and stock assessments; FAO/Norway EAF-Nansen project generating scientific and socio-economic indicators under its Ecosystem Assessment and Monitoring component. The project will also use information from past and ongoing national research initiatives.

The co-financing contribution of the BCLME science programme and associated projects is estimated to be USD 4.358 million.

Component 2: Piloting of improved climate-resilient fisheries practices.

Baseline scenario. Commercial national fisheries in all three countries are actively managed using science-based approaches and with reasonable stakeholder participation, although differing in nature and effectiveness between the different fisheries. Development of the mariculture sector is similarly managed and controlled. A suite of different management measures is used in these

fisheries, with an emphasis on output control such as Total Allowable Catch (TAC) in Namibia and South Africa and also for some fisheries in Angola. The output controls are complemented with other measures including effort regulation, gear regulations, spatial and seasonal closures and others. Assessment of the resources and decisions on management are passively adaptive in that management measures are adjusted, typically annually, to take account of variability in abundance. The current approaches, however, are largely reactive and longer-term climate change and variability are not taken into account at present in management or sector planning, or in development of the mariculture sector. This weakness has already led to some unexpected shocks and negative impacts in all countries through distributions shifts, changes in abundance of target species.

At local level, fishing practices of small-scale artisanal and subsistence fishery communities are based on local ecological knowledge, available fishing equipment, etc. Communities respond to changes in fish distribution and abundance by employing strategies such as changing location of fishing grounds and adapting fishing gear and equipment. The preliminary vulnerability assessment of coastal fishing communities in the region has revealed that the artisanal and subsistence fishers and their families are generally the poorest, least mobile and least organized, and their opportunities for alternative sources of income the most limited. They are very heavily dependent on the fish which they catch for food, and have little money to buy alternative foodstuffs when fish are in short supply. The situation is severe in Angola and South Africa because of the large number of artisanal and subsistence fishers there.

Adaptation alternative. Additional LDCF/SCCF resources will support, first and foremost, the participatory planning and implementation of adaptation strategies, including alternative livelihoods, in the most vulnerable selected communities and fisheries (from capture fisheries to post-harvest activities). The project will also demonstrate the use of the best available scientific and stakeholder knowledge in participatory processes to consider the ecological, social and economic implications of climate change in the mariculture sectors of the countries, the semi-industrial fishery in Angola, the small-pelagic fishery in South Africa (the second most valuable fishery in the country) and two national fisheries in Namibia that will be selected. The enhancement of management plans to deal more effectively with climate change and variability will be specific to each fishery and mariculture venture. The integration of climate change and variability will complement the EAF-Nansen project component that promotes the integration of human dimension of an ecosystem approach to fisheries (EAF) into fisheries management in the region. Additional activities will also address priority gaps in existing systems for early warning of extreme weather events and climate-induced risks in fisheries, to ensure that efficient and relevant information is available to fishers and mariculturalist to prepare for and cope with severe events.

The value of the baseline regular programmes of national fisheries authorities which will be directly influenced by the additional LDCF/SCCF funded activities is estimated to be USD 5.378 million

Component 3: Capacity building and promotion of improved climate-resilient fisheries practices.

Baseline scenario. As emphasized throughout this document, current understanding of the impacts of climate change and variability on fisheries social-ecological systems in the region is limited and, as a consequence, the capacity to prepare for and respond to those impacts is similarly limited. Notwithstanding the scarcity of initiatives, the project will seek and partner with other agencies, governmental and non-governmental, already engaged in complementary activities to collaborate with them in both awareness creation and capacity development. The Benguela Current Commission has developed a training and capacity building (TCB) programme to improve the knowledge and skills of managers and technical staff from national institutions in the three countries. The programme is delivering regular training courses on the implementation of EAF, stock assessment and other areas, but has lacked specific training on climate change risks and adaptation strategies so far.

Adaptation alternative. The intervention under this component will be aimed at addressing barriers 2 and 4. Information and lessons-learned resulting from Components 1 and 2, together with other relevant and influential knowledge, will be used to design training and awareness programmes for specific target groups (communities, BCC, technical staff from national institutions, leaders in commercial fisheries and others). The programmes will be integrated into existing ongoing capacity building programmes (BCC training and capacity building programme and others) to ensure sustainability beyond the duration of this project.

The baseline co-financing contribution of the BCLME training and capacity development programme and the EAF Nansen project will be USD 2.650 million.

Component 4: Monitoring & Evaluation and adaptation learning

The objective of Component 4 is to insure a systematic results-based monitoring and evaluation of project progress towards achieving project outputs and outcome targets as established in the Project Results Framework. It also serves to promote the wider dissemination of project results for replication in other large marine ecosystems, natural resources and climate change adaptation networks. As this is one of the first projects of its nature, there is particular need to document and communicate project process and impacts to the global community.

The co-financing for this Component is estimated to be USD 3.195 million, which will come from the BCC itself and from the government departments' ongoing M&E and communication activities.

1.3 FAO's comparative advantage

FAO, with 191 member countries, is the United Nations agency with competency in all areas of fisheries and aquaculture and enjoys a worldwide reputation for the quality and effectiveness with which it is fulfilling this mandate. FAO has a long and successful track record of building capacity and promoting regional collaboration in fisheries through its normative programmes, country offices, FAO regional fisheries bodies, and through cooperation with other non-FAO regional fisheries bodies, other IGOs, UN Agencies and others. It has also led global work on implementing the FAO Code of Conduct for Responsible Fisheries, an ecosystem approach to fisheries and aquaculture and has produced codes of practices and standards related to product safety and responsible trade, including guidelines for the ecolabelling of fish and fishery products. The Organization has developed Voluntary Guidelines on Securing Sustainable Small-Scale Fisheries and the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security through global, participatory processes, both of which will be adhered to during this project. FAO has worked closely with Angola, Namibia and South Africa on fisheries for decades and with the BCC since its inception. FAO and the BCLME Project, with GEF funding, collaborated on the very successful project "Ecosystem Approaches for Fisheries Management in the Benguela Current Large Marine Ecosystem" (2004-2006) and the Organization is currently engaged with the BCC in several projects within the EAF-Nansen Project. Other joint activities between FAO and the three countries take place almost continuously and FAO has very good relationships with the fisheries Ministries and Departments in the three countries.

Furthermore, FAO is contributing to bringing fisheries and aquaculture into the climate change discussions at a national, regional and global levels. This has included release of a Policy Brief on

building adaptive capacity¹⁷, holding of FAO Expert Workshops on Climate Change Implications for Fisheries and Aquaculture in 2008¹⁸ and Vulnerability Assessment methodologies for Fisheries and Aquaculture in 2013¹⁹, an initial global review of climate change implications for the sector in 2009²⁰, multiple regional and national vulnerability assessment and priority setting workshops around the globe²¹ as well as community-level vulnerability assessments and adaptation support activities²². In 2009, FAO helped to form the Global Partnership for Climate, Fisheries and Aquaculture (PaCFA)²³, a voluntary grouping of 23 international organizations and sector bodies sharing a common concern for climate change interaction with global waters and living resources and their social and economic consequences. With FAO support, the PaCFA has been raising awareness of issues relating to oceans, fisheries and aquaculture within the United Nations Framework Convention on Climate Change (UNFCCC) processes. FAO is currently engaged in a number of projects and activities around the world towards strengthening adaptation and mitigation of climate change in fisheries and aquaculture including through the project “Climate Change, Fisheries and Aquaculture: Understanding the Consequences as a Basis for Planning and Implementing Suitable Responses and Adaptation Strategies funded by the Government of Japan, the EAF-Nansen Project and the NEPAD Agency – FAO Fisheries Project. Furthermore, climate change is always an important consideration in planning and implementation of an ecosystem approach to fisheries and therefore enters into all of FAO’s extensive normative and field-based programmes of work on EAF.

The mandate of the Fisheries and Aquaculture Department of FAO is to facilitate and secure the long-term sustainable development and utilization of the world’s fisheries and aquaculture resources. FAO’s areas of comparative advantage include its key responsibility for the Code of Conduct for Responsible Fisheries; enhancing institutional, planning and management capacity for sustainable fisheries; sustainable and ecosystem-based fisheries management, including in particular technical and normative measures for the reduction of environmental impact of fisheries. FAO has multi-disciplinary competence at the global level in all thematic areas of marine and freshwater fisheries in general and it’s Fisheries and Aquaculture Department is well staffed with internationally-recruited specialists at the headquarters in Rome as well as in the regional and country representations.

¹⁷ FAO. 2007. Building adaptive capacity to climate change. Policies to sustain livelihoods and fisheries. New Directions in Fisheries – A Series of Policy Briefs on Development Issues, No. 08. Rome. 16 pp. <ftp://ftp.fao.org/docrep/fao/010/a1115e/a1115e00.pdf>

¹⁸ FAO. 2008. Report of the FAO Expert Workshop on Climate Change Implications for Fisheries and Aquaculture, Rome, 7–9 April 2008. FAO Fisheries Report No. 870. Rome. 2008. 32 pp. <ftp://ftp.fao.org/docrep/fao/010/i0203e/i0203e00.pdf>

¹⁹ FAO. 2013. Report of the FAO/PaCFA Expert Workshop on Assessing Climate Change Vulnerability in Fisheries and Aquaculture: Available Methodologies and their Relevance for the Sector, Windhoek, Namibia, 8–10 April 2013. FAO Fisheries and Aquaculture Report No. 1047. Rome. 29 pp. <http://www.fao.org/docrep/018/i3357e/i3357e.pdf>

²⁰ FAO. 2009. Climate change implications for fisheries and aquaculture: overview of current scientific knowledge. FAO Fisheries and Aquaculture Technical Paper. No. 530. Rome. 212 pp. <http://www.fao.org/docrep/012/i0994e/i0994e00.htm>

²¹ Including APFIC member countries, Pacific SIDS, Latin America, Lake Chad Basin, Benguela Current, Vietnam, Near East/North Africa, African Great Lakes. For reports, search <http://www.fao.org/fishery/publications/search/en>

²² See, for example, Cinner, J., McClanahan, T., Wamukota, A., Darling, E., Humphries, A., Hicks, C., Huchery, C., Marshall, N., Hempton, T., Graham, N., Bodin, Ö., Daw, T. & Allison, E. 2013. Social-ecological vulnerability of coral reef fisheries to climatic shocks. FAO Fisheries and Aquaculture Circular No. 1082. Rome, FAO. 63 pp. <http://www.fao.org/docrep/018/ap972e/ap972e.pdf>

²³ Current members of the PaCFA are the BCC, CBD, EBCD, FAO, IAEA, ICAFIS, ICES, ICFA, IFAD, ISDR, NACA, NACEE, NEPAD, OECD, OSPESCA, PICES, SEAFO, SPC, UNDP, UNEP, UNESCO-IOC, World Bank and WorldFish.

1.4 Participants and other stakeholders

The project will work closely with a wide range of stakeholders including provincial and local government agencies, universities, research institutions, civil society and community-based organizations, private sector partners within industries such as fishing, mining and offshore oil and gas, and local communities and residents living in or around the coastal areas. The main partner for the project execution on a regional level is the Benguela Current Commission (BCC), which will be the executing agency and the Food and Agriculture Organization (FAO) will be the implementing agency. Both of these organizations will be responsible for building and fostering capacity for improved regional coordination and improved joint management of the BCLME towards climate change resilience.

A crucial aspect of this project is that the stakeholders come from a wide range of different sectors and levels of power, from the government ministers responsible for fisheries to the interested coastal community members. This stakeholder landscape has been mapped out in order to comprehensively and holistically assess the vulnerabilities of the BCLME to climate change, identify already existing adaptive capacity and build the system's resilience both in terms of ecological and human well-being.

On a national level the ministries of fisheries will play a major role in all three countries in terms of the implementation of this project. They will be strongly supported by national and regional research and scientific institutions. The table below provides a broad overview of the stakeholder landscape and an indication of the distribution of some of the roles and responsibilities.

Table 1.1. National partners and stakeholders in the project.

Angola	Namibia	South Africa	Roles/responsibilities
Public Sector and Parastatals			
<ul style="list-style-type: none"> Department of Agriculture, Fisheries and Rural Development: IPA and INIP Plus other Departments including: <ul style="list-style-type: none"> Department of Environment Department of Transport Department of Planning Department of Petroleum Ministry of Water and Energy 	<ul style="list-style-type: none"> The Department of Fisheries and Marine Resources (MFMR) Department of Environment and Tourism (MET) Plus other Departments including: <ul style="list-style-type: none"> Department of Trade and Industry Department of Agriculture, Water and Forestry Department of Mines and Energy Department of Works and Transport 	<ul style="list-style-type: none"> Department of Agriculture, Forestry and Fisheries (DAFF): Fisheries Division Department of Environmental Affairs (DEA) Plus other Departments including: <ul style="list-style-type: none"> Department of Mineral Resources Department of Transport Department of Trade and Industry 	<ul style="list-style-type: none"> National project partners National coordination Research and knowledge management Identify policy/legislation gaps and mainstreaming of climate change considerations Strengthening cross-sectoral coordination
<ul style="list-style-type: none"> Local authorities 	<ul style="list-style-type: none"> Local municipalities Regional councils Traditional 	<ul style="list-style-type: none"> Local municipalities Provincial government Cooperative 	<ul style="list-style-type: none"> Development and dissemination of information tools Assisting in

Angola	Namibia	South Africa	Roles/responsibilities
	Authority Trust	governance and traditional affairs	implementation of VAs and identifying adaptation strategies <ul style="list-style-type: none"> Implementing early warning mechanisms
<ul style="list-style-type: none"> Ministerio dos Petroleo Empresas Petroliferas Ex.Chevron Angola - LNG 	<ul style="list-style-type: none"> NAMPower National Petroleum Corporation of Namibia (NAMCOR) 	<ul style="list-style-type: none"> South African Biodiversity Institute (SANBI) SANParks Council for Scientific and Industrial Research (CSIR) CapeNature ESKOM 	<ul style="list-style-type: none"> Research and monitoring Inter-sectoral coordination and integration of climate change considerations into policies, planning and regulations
<ul style="list-style-type: none"> Capitania do Porto de Luanda Lobito Benguela Cabinda Porto Amboim 	<ul style="list-style-type: none"> Namibia Port Authorities (NAMPORT) Namibia Tourism Board (NTB) Namibia Standards Institute 	<ul style="list-style-type: none"> The South African Maritime Safety Authority (SAMSa) TRANSNET national ports authority 	<ul style="list-style-type: none"> Regulation and monitoring Enforcement of safety standards Mainstreaming climate change considerations Training and climate change awareness
<ul style="list-style-type: none"> National Institute of Meteorology and Geophysics (INAMET) National Civil Protection Service 	<ul style="list-style-type: none"> Meteorological Services of Namibia Fisheries Observer Agency (FOA) 	<ul style="list-style-type: none"> The South African Weather Service SA Weather and Disaster Information Service (SAWDIS) South African Environmental Observation Network (SAEON) Applied Centre for Climate & Earth Systems Science (ACCESS) 	<ul style="list-style-type: none"> Research and risk monitoring Information dissemination Conduct GAP analysis of existing warning systems Cross-sectoral integration of climate change considerations
<ul style="list-style-type: none"> African Center of Meteorological Application for Development (ACMAD) 			<ul style="list-style-type: none"> Support the provision of weather and climate information for sustainable development
Private sector/Industry/Joint Ventures			
<ul style="list-style-type: none"> Fishing Associations (e.g. Armadores industriais privados da Pesca, Federação Angolana de Pesca Desportiva) 	<ul style="list-style-type: none"> Confederation of Namibian Fishing Associations Tullow Group (Kudu Gas Group) De Beers Marine Namibia 	<ul style="list-style-type: none"> The South African Rock Lobster Industry Association (SCRLIA) South African Pelagic Fishing Industry Association (SAPIA) FishSA 	<ul style="list-style-type: none"> Monitoring, research and reporting on key indicators of climate change Participating in the design and

Angola	Namibia	South Africa	Roles/responsibilities
	<ul style="list-style-type: none"> Chamber of Mines Namibian Hake Association Namibian Rock Lobster Fishing Association 		<ul style="list-style-type: none"> implementation of VAs Identifying adaptation priorities and implementing national activities
Research and academic Institutions			
<ul style="list-style-type: none"> Agostinho Neto University 	<ul style="list-style-type: none"> University of Namibia (UNAM) Polytechnic of Namibia Namibia Maritime and Fisheries Institute (NAMFI) 	<ul style="list-style-type: none"> South African Universities and other educational institutions: <ul style="list-style-type: none"> Cape Town Rhodes Western Cape 	<ul style="list-style-type: none"> Research, monitoring and reporting Dissemination of information and design of information tools Awareness campaigns Assisting in the design and implementation of VAs
NGOs and Other GEF-projects			
<ul style="list-style-type: none"> Liga Nacional de Apoio aos Lares de Internamento em África (Linália) Group of Support to Peoples in Need (GAPC) CARE Angola Acção para o Desenvolvimento Rural e Ambiente (ADRA) Juventude Ecológica Angolana (JEA) Addressing Urgent Coastal Adaptation Needs and Capacity Gaps in Angola (LDCF-UNEP) Integrating Climate Change into Environment and Sustainable Land Management Practices (LDCF-AfDB) 	<ul style="list-style-type: none"> Namibia Nature Foundation (NNF) Namibian Coast Conservation and Management Project (NACOMA) 	<ul style="list-style-type: none"> World Wildlife Foundation (WWF) South Africa Environmental Monitoring Group (EMG) 	<ul style="list-style-type: none"> Knowledge input and implementation of VAs Identifying existing and potential adaptive strategies Awareness campaigns
CBOs			
<ul style="list-style-type: none"> Cooperativa dos Pescadores da Ilha do Cabo (Luanda). Cooperativa do Kilamba Xiati (Cauaco). Associação dos pescadores do Gilco Kuanza sul. 	<ul style="list-style-type: none"> Hanganeni Fishing Association Trade Unions (e.g. Namibia Fishing Industries and Fishermen Workers Union) 	<ul style="list-style-type: none"> National Federation of Small-scale Fisheries (including South African United Fishing Front (SAUFF)) Masifundise Development Trust Coastal Links 	<ul style="list-style-type: none"> Conduct VAs and gathering of fishers knowledge Participate in developing locally-adaptive management plans Dissemination of

Angola	Namibia	South Africa	Roles/responsibilities
<ul style="list-style-type: none"> Cooperativa de pescadores da Damba Maria.(Benguela) 		(including Artisanal Fisheries Association) <ul style="list-style-type: none"> Village/community associations 	information and knowledge

1.5 Lessons learned from past and related work, including evaluations

An enormous amount of knowledge and experience has been gained through extensive efforts to ensure sustainable utilization of the BCLME's fishery resources for the benefit of the countries and those people most dependent on fisheries for their livelihoods and well-being. Government agencies have led these efforts through implementation of their line functions and mandates but they have also been assisted through a number of donor-funded projects. Of particular relevance to this project have been the regional Benguela Environment Fisheries Interaction and Training (BENEFIT) programme, the GEF-funded Benguela Current Large Marine Ecosystem (BCLME) programme and, most recently the GEF-funded, "Implementation of the BCLME Strategic Action Programme for restoring depleted fisheries and reducing coastal resources degradation" (2010-2014). Reflecting the lessons learned from these and other activities in the region, the SAP IMP Project acknowledged that the inherent natural variability in the BCLME combined with global climate change represented a real threat to sustainable fisheries. The project document gives considerable emphasis to addressing this threat, including a proposal for a Management Advisory Committee to address environmental variability and climate change prediction, which would include the task of coordinating discussions relating to the development of a 'Global Collaborative Strategy for Climate Change Implications'.²⁴ This theme was also addressed in a regional workshop on the implications of climate change from the region that sought to synthesise the available knowledge and lessons learned in order to inform future actions, including the development of this project.²⁵ The lessons from the combined expertise and experience of the participants at that workshop have been carried forward in the design of the project, for example:

- the BCLME and its fishery and coastal systems are complex and experiencing change caused by a number of drivers, including overfishing, resource and water management, influences from the markets and climate change and variability;
- within this complexity, the vulnerability of the fisheries systems may be caused by factors other than environmental ones;
- as a consequence, adaptation must be undertaken in a multi-sectoral and multidisciplinary context but that it could still be led by sector-specific groups;
- in accordance with the precautionary approach, lack of certainty should not preclude immediate action based on the best information available; and
- the multi-sectoral structure and approach of the BCC was an important asset and driver for integrated management of the system and implementation of holistic, multi-sectoral adaptation plans across the region.

²⁴ UNDP Project Document. 2008. Implementation of the Benguela Current LME Strategic Action Programme for Restoring Depleted Fisheries and Reducing Coastal Resources Degradation. Governments of Angola, Namibia, South Africa and the United Nations Development Programme. 141pp.

²⁵ FAO. 2012. Climate change implications for fisheries of the Benguela Current region – Making the best of change. Eds. De Young, C., Hjort, A., Sheridan, S. & Davies, S. FAO/Benguela Current Commission Workshop, 1–3 November 2011, Windhoek, Namibia. FAO Fisheries and Aquaculture Proceedings. No. 27. Rome, FAO. 2012. Pp25-78.

While Angola, Namibia and South Africa have done little work and therefore have limited experience in adaptation and resilience to climate change in fisheries and mariculture, many other countries and regions are considerably more advanced and a lot of insight and lessons have been learned from these experiences. These were drawn together in a workshop organized by FAO and the Global Partnership on Climate, Fisheries and Aquaculture (PaCFA), held in Namibia in 2013.²⁶ The purpose of the workshop was to review the current state of knowledge on the application of climate variability and change vulnerability methodologies in fisheries and aquaculture. It also addressed the link between expert advice and practical use of vulnerability methodologies from around the world. The workshop defined a set of guiding steps for undertaking a vulnerability assessment and also proposed a set of principles that should be respected in any vulnerability assessment. These principles are particularly pertinent to this project and have been incorporated into the project design. Many of them apply not only to the vulnerability assessment itself, but also to fisheries planning and management in general. The principles include:

- A vulnerability assessment should not be taken as an end in itself but should be linked to concrete adaptation actions that lead to the achievement of societal objectives;
- Recognize that climate change is most often one of many other risks and drivers of change;
- Use an approach that relies on established and robust methodologies in order to ensure accountability and replicability but without compromising the need to adapt the approach to the local context;
- Make optimal use of a combination of top-down and bottom-up approaches depending on local circumstances;
- It should be based on best available scientific information while also addressing perceptions and subjective information from stakeholders;
- It should be transparent and explicitly report limitations and uncertainties; and
- Recognize that there may be winners and losers, both of which need to be identified explicitly.

These and the other principles developed at the workshop will be applied in all applicable activities and processes within the project.

Finally, the project is inherently addressing management and governance of fishery systems. Understanding of best practices in management and governance has evolved rapidly and substantially since the middle of the 20th Century but there is now widespread agreement on what they imply, including for fisheries and other uses of marine ecosystems and services. Principles and practices of good governance and management can be found in, for example, the FAO Code of Conduct for Responsible Fisheries, the 12 principles of an ecosystem approach provided by the Convention on Biological Diversity (Decision V/6), the Future We Want document adopted by the United Nations Conference on Sustainable Development, Rio de Janeiro, Brazil, June 2012, as well as in many academic and technical publications²⁷. Some key lessons that will be respected in this project

²⁶ FAO. 2013. Report of the FAO/PaCFA Expert Workshop on Assessing Climate Change Vulnerability in Fisheries and Aquaculture: Available Methodologies and their Relevance for the Sector, Windhoek, Namibia, 8–10 April 2013. FAO Fisheries and Aquaculture Report No. 1047. Rome. 29 pp. <http://www.fao.org/docrep/018/i3357e/i3357e.pdf>

²⁷ Examples of publications that analyze and provide insight into best practice include: Berkes, F., Mahon, R., McConney, P., Pollnac, R. and Pomeroy, R. (2001) *Managing Small-scale Fisheries: Alternative Directions and Methods*. International Development Research Centre, Ottawa, Canada; Charles, A. T. 2001. *Sustainable fishery systems*. Blackwell Scientific Publications, London; Cochrane, K.L. and S.M. Garcia (eds). 2009. *A Fishery Manager's Guidebook*, 2nd Edition. FAO and Wiley-Blackwell Publishers. 518pp; FAO. 2009. *Fisheries management*. 2. The ecosystem approach to fisheries. 2.2 The human dimensions of the

are listed here. These are based on the 2014 Chairperson's text of the FAO 'Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication',²⁸ which provides a very recent and hence up-to-date summary of basic principles and approaches, and one that is particularly relevant to this project. The lessons summarized in the principles underpinning the guidelines include:

- The need to respect cultures, and recognize and respect existing forms of organization, and traditional and local knowledge and practice;
- Gender equality and equity is fundamental to any development;
- Promotion of justice and fair treatment;
- Respect for the rule of law;
- The importance of transparency and accountability;
- The need to apply the precautionary approach and risk management to guard against undesirable outcomes, including overexploitation of fishery resources and negative environmental, social and economic impacts; and
- Implementation of holistic and integrated approaches that recognize the ecosystem approach to fisheries as an important guiding principle, and respect the comprehensiveness and sustainability of the ecosystem as a whole as well as the livelihoods of those who depend on its goods and services.

The draft guidelines also stress the need to 'recognize that combating climate change, including in the context of sustainable small-scale fisheries, requires urgent and ambitious action'.

1.6 Links to national development goals, strategies, plans, policy and legislation, LDCF/SCCF and FAO's Strategic Objectives

a) Alignment with national development goals and policies

The project builds on and is consistent with the perspectives, priorities and particular concerns of Angola, Namibia and South Africa in relation to fisheries, the marine environment and climate change. These have been presented as follows:

Angola submitted its National Adaptation Programme of Action (NAPA) in December 2011 and its Initial National Communication to the UNFCCC in January 2012, identifying vulnerability and adaptation in fisheries as one of its main priorities. Fisheries contribute 7.8% of the Angolan GDP and the NAPA and National Communication identify fisheries as being among the most vulnerable sectors. Important threats particularly relevant to marine fisheries that were identified include sea level rise, changes in the Benguela Current, as well as changes in wind frequency and intensity. It is recognized in the NAPA that changes to the Benguela Current may have implications for inshore fisheries, dependent communities and for the fishing industry as a whole. The NAPA further notes that there is currently insufficient knowledge, scientific research, or data to be able to assess the specific amplitude of likely impacts on water, soil, forests or coastal zones. Furthermore, there is insufficient data and technical capacity available in climate monitoring to be able to produce legitimate and timely forecasts, early warnings or long-term projections. Lastly, to address these issues, the NAPA lists a number of priority actions, including the need to study the vulnerability of fisheries, create early warning systems (e.g. for flooding and storms), and soil erosion control. The NAPA includes Project 4: "Study the vulnerability of the fisheries sector to climate change and

ecosystem approach to fisheries. FAO Technical Guidelines for Responsible Fisheries No.4Suppl.2Add.2; Ostrom, E. (1990) *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge University Press, Cambridge. 280 pp.

²⁸ http://ftp.fao.org/FI/DOCUMENT/ssf/SSF_guidelines/TC/2014/2e.pdf. Accessed 13 March 2014.

current modifications” as the fourth highest ranked priority action in a list of 15 priorities identified in its preparation.

Namibia adopted a National Policy on Climate Change for Namibia (NCCP) in October 2011 - which notes the potentially catastrophic impacts on livelihoods caused by the reliance of the majority of the population on climate-sensitive sectors such as agriculture, livestock management and fishing. To address climate change uncertainty, Namibia sets out to: promote integrated fisheries and marine resources management; encourage any other approach that leads to sustainable management and utilization of fisheries and marine resources; and strengthen and encourage integrated coastal zone management plans for the protection of marine life. Namibia’s Second National Communication to the UNFCCC from July 2011, recognizes the significant contribution of its commercial fishing and fish processing sectors to the economy in terms of employment, export earnings, and contribution to GDP and also notes that its participation in the BCC has contributed towards attaining sustainable fisheries, including rebuilding fish stocks. Lastly, Namibia’s Third National Development Plan recognizes the importance of the impacts of environmental/climatic change on marine capture fisheries production. In addressing such impacts, one of the goals of the Plan is to strengthen joint management of shared fish stocks between Namibia, South Africa and Angola through the BCC.

South Africa notes in its Second National Communication to UNFCCC of November 2011 that the coastal and marine environment around southern Africa is one of the most varied in the world. With regards to the South African part of the Benguela, some of the anticipated effects of climate change include increased seasonal storm activity and anticipated sea level rise. It is further recognized that South Africa has experienced significant declines in catches and the loss of many species both as a result of over-fishing, and due to the natural migration of fish populations related to environmental changes. Subsistence fishing and other marine resource harvesting practices, although small and localized compared to some other national sectors, constitute important coastal subsistence livelihoods. In responding to climate change impacts, the Communication suggests that sound integrated ecosystem management practices will be key as they contribute to increasing resilience. In a presentation by the South African Department of Environmental Affairs during the UNFCCC COP 17 Ocean’s Day, South Africa proposed some further actions to address climate change from an African coastal and ocean perspective, recognizing that both local and regional actions are required. Noting that decision-making on climate issues needs to be underpinned by regular and timely reports of observations, the proposed actions included assessing coastal vulnerability around South Africa, implementing early warning systems for ocean and coastal hazards, enhancing observing and reporting capabilities around the coasts of Africa, as well as instituting effective governance and legislation.

The project will contribute to the implementation of one of the actions identified in the revised BCC Strategic Action Programme 2015-2015 “Improve the understanding and predictability of climate change impacts and climate variability at seasonal inter-annual and longer time scales.”

b) Alignment with GEF focal area and/or LDCF/SCCF strategy

The project is consistent with the “*Strategy on Adaptation to Climate Change for the Least Developed Countries Fund [LDCF] and the Special Climate Change Fund [SCCF1]*”. In particular, by assessing the vulnerability of fisheries and fishery-dependent communities, piloting appropriate climate-resilient fisheries practices and building adaptive capacity at all levels from local and national (local, national and regional), the project will contribute to the achievement of CCA *Objective1: Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level* and CCA *Objective 2: Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level* and their associated outcomes. In

conformity with these strategies, the project will build resilience and reduce vulnerability of the Benguela Current marine fisheries systems by facilitating strengthened adaptive capacity at all levels from local and national to regional.

c) Alignment with FAO Strategic Framework and Objectives

FAO's Strategic Framework 2010 – 2019 identified among other challenges the significant pressures on natural resources (including aquatic resources and biodiversity) while, at the same time, noted the existence of a number of opportunities to address these challenges. These included the following specifically relevant to the Project: (i) global governance mechanisms to address issues common to countries (including the loss of biodiversity and declining fish stocks); (ii) increased public awareness of the environmental dimensions of food production, including the importance of making food supply chains more environmentally friendly; and (iii) the role of technological development in addressing environment problems. To guide the Organization's response to priorities identified in the Framework a series of Strategic Objectives (SOs) and regional priorities were formulated. The proposed project will support the FAO Strategic Objective SO2, "Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner with links to: SO5, "Increase the resilience of livelihoods to threats and crises" and the African Regional Priority 2: "Promote Sustainable Use and Management of Natural Resources."

Furthermore, the project objectives are also in line with FAO Climate Smart Agriculture and the FAO Adapt Programme, of which the six priority action areas for adaptation (in agriculture, forestry and fisheries) are as follows:

1. Development and application of data and knowledge for impact assessment and adaptation;
2. Support and improvement of governance for climate change adaptation;
3. Building of livelihood resilience to climate change;
4. Targeted approaches for conservation and sustainable management of biodiversity;
5. Identification, support and application of innovative technologies; and
6. Improved disaster risk management (DRM).

The project is directly in line with the 5-year FAO Strategy for fisheries, aquaculture and climate change.²⁹

²⁹ FAO Strategy for fisheries, aquaculture and climate change: Framework and aims 2011–16. ftp://ftp.fao.org/fi/brochure/climate_change/strategy_fi_aq_climate/2011/climate_change_2011.pdf

SECTION 2 - PROJECT FRAMEWORK AND EXPECTED RESULTS

2.1 Project strategy

The strategy of this project is to facilitate a shift in planning and practice in two, complementary directions. The first direction is to move consideration of the impacts of climate change and variability from being an occasional, marginal consideration to being an integral part of both routine and strategic decision-making and action in fisheries governance and development in the Benguela Current region. The second direction is to increase awareness at the local, national and regional levels of the importance of multi-sectoral approaches to adaptation and increasing resilience to climate impacts, in which fisheries and aquaculture should be an integral part. The net result of these two shifts should be more effective and robust approaches to fisheries governance and to coastal development in the face of climate change in the region as a whole.

The strategy will be implemented along three primary pathways. The first pathway will be the assimilation and dissemination of available knowledge to increase understanding and awareness of the existing and the likely future impacts and implications of climate change and variability on fisheries, and mariculture, and on communities and other settlements dependent on them. The consequences of those impacts will be expanded to demonstrate their knock-on effect on social and economic development of the coastal areas as a whole and the importance of an integrated, holistic approach to addressing them. Knowledge and awareness will be strengthened at scales from community to regional and amongst stakeholders ranging from artisanal fishers to senior governmental officials and politicians. The existing network represented by the BCC and its stakeholders will be an important part of the strategy.

The second pathway will be based on piloting of best-practices to strengthen climate resilience in fisheries and aquaculture and thereby improve governance and the security and livelihoods of coastal dwellers. The pilots undertaken will simultaneously lead to improvements on the ground in the pilot areas and acquiring knowledge and lessons learned to be applied in other equivalent cases. Piloting of approaches to reduce vulnerability will take place through fully participatory exercises in selected, high risk communities and selected national and regional fisheries that have also been identified as being affected by and vulnerable to climate. The pilots will focus on the gaps and primary threats identified through vulnerability assessment and work within the framework of an integrated ecosystem and participatory approach to strengthen resilience, including reinforcement of existing systems and institutions for early warning of extreme events.

Assessment of potential adaptation options and piloting of approaches to increase resilience and reduce vulnerability will be done within the framework of an ecosystem approach. The ecosystem approach to fisheries is the standard approach in the region and the project will build on this baseline in its work on adaptation. The ecosystem approach to fisheries, as defined by FAO³⁰ 'strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries'. With its emphasis on balancing the different, and sometimes conflicting, objectives of stakeholders and the need for ensuring and integrated approach, and thereby integrated solutions, the ecosystem approach is

³⁰ FAO 2003 — Fisheries Management 2. The ecosystem approach to fisheries. FAO Technical Guidelines for Responsible Fisheries. 4(Suppl. 2): 112 pp.

considered the best framework for assessing and addressing vulnerability to climate change in fisheries systems.³¹

The third pathway will build on the improved knowledge and awareness created in the first, together with the existing multi-sectoral platform offered by the BCC, to ensure that fisheries, together with mariculture as a closely related sector, are recognized and given appropriate attention in initiatives and plans in the coastal area, in which they are currently frequently neglected or under-valued. Particular focus will be on local, national and regional efforts to improve food security, social and economic development and resilience to climate change, as one driver amongst others. The strategic approach is to target bringing about changes in policies, working with policy- and decision-makers, and encouraging collaboration at and through formal and informal multi-sectoral nodes and events.

2.2 Project objectives

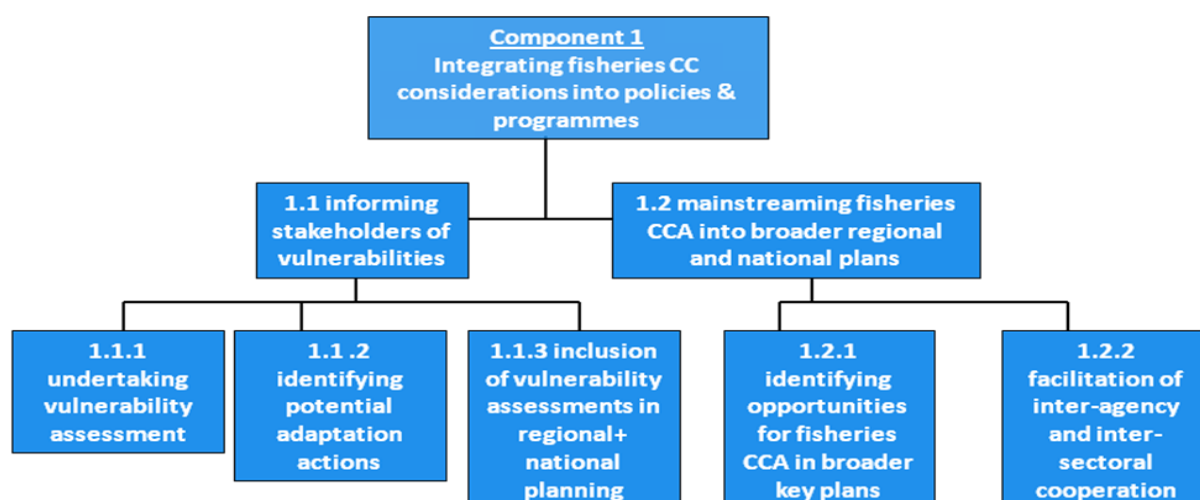
The objective of this project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the Benguela Current Large Marine Ecosystem through implementing of adaptation strategies in order to ensure food and livelihood security. Specific project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change to ensure that the sector is able to make its contribution and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national fisheries and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

2.3 Project components

The Project has been structured into the following four interlinked components and sub-components. These are described in more detail below and include accompanying outcomes, outputs and specific activities. Component 4, Information Dissemination and Monitoring and Evaluation (M&E), a cross-cutting component, has been described in more detail in Section 4.

Component 1: Integrating fisheries climate change considerations into fisheries policies and planning as well as into broader inter-sectoral development and climate change policies and programmes.

³¹ See, for example, “Building resilience for adaptation to climate change in the fisheries and aquaculture sector” in <http://www.fao.org/docrep/017/i3084e/i3084e.pdf>



The objective of Component 1 is to ensure that national and regional policies and plans for fisheries governance and development give due consideration, including well-defined actions, to the likely implications of climate change and variability. Part of the objective is to ensure, at the same time, that the contributions of and threats to fisheries and mariculture are included in overall national and regional development and climate change policies and actions, and the role and needs of the sector are given appropriate priority in these. The primary activities under this Component centre on undertaking more detailed vulnerability assessments on fisheries and communities that have been identified as most likely to be at risk, identification of the most urgent actions required to increase resilience in those found to be at highest risk, and activities aimed at ensuring the appropriate profile and place of the fisheries sector in national and regional plans and programmes on development, food-security and climate change.

Outcome 1.1. Regional and national authorities and major stakeholders are informed of vulnerabilities across the region to predicted impacts of climate variability and change

Output 1.1.1 *Participatory and integrated vulnerability assessments of fisheries and fishery-dependent communities undertaken for all three countries and results disseminated.*

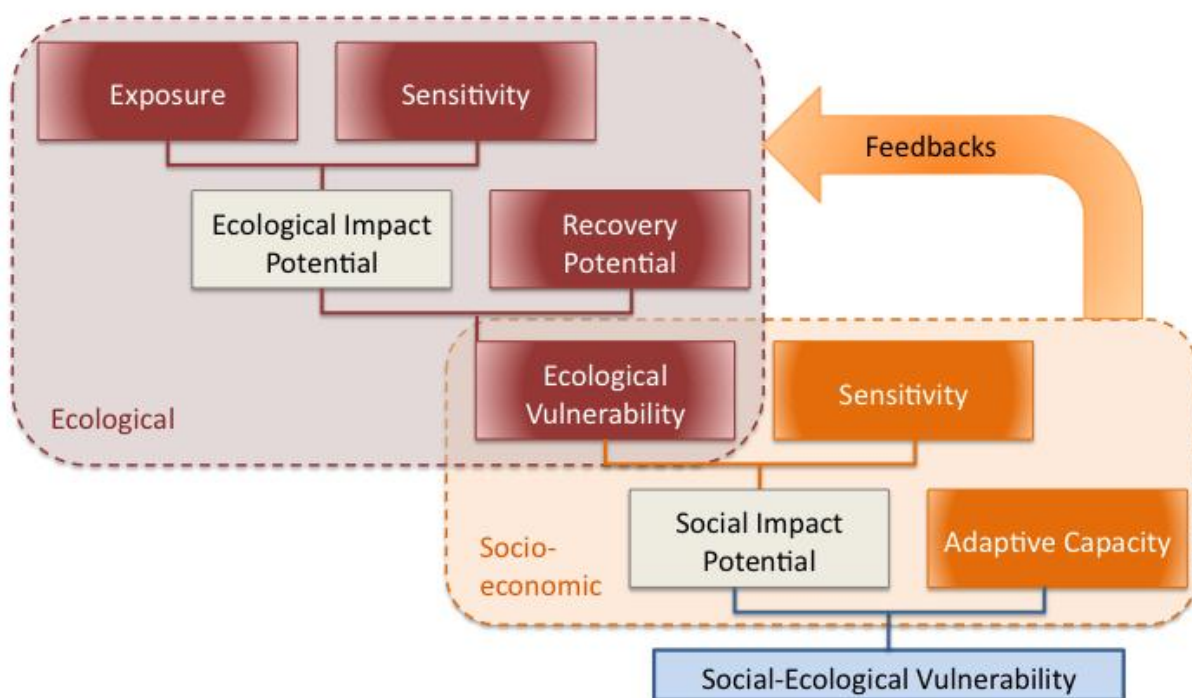
The project will apply the generic methodology developed by the Intergovernmental Panel on Climate Change (IPCC) with an expanded section on ecological vulnerability as the interface between ecological and social vulnerabilities (Fig 2.2). The means of applying this framework, in particular the information available and its use to estimate the different indicators within the framework, will vary between the different communities and fisheries. The application of the framework will therefore need to be adapted to suit the specific circumstances in each case. The methodology will be applied to assess different fisheries and communities across the region and will encompass biological, ecological, social and economic aspects. Participatory approaches will be central to the method. The assessments will encompass seven selected artisanal fishing communities in Angola, covering all the geo-political regions of the country and, at national scale, the semi-industrial fisheries that target primarily sardinellas and horse mackerel. There is considerable concern in Angola about the impacts on fishery resources of substantial increases in the abundance of Cape fur seals *Arctocephalus pusillus* in the southern parts of the country resulting from a northerly shift in distribution in recent decades.

The small-scale and artisanal fisheries are of comparatively minor importance in Namibia and the country has chosen not to prioritize these in the project. Instead, Namibia has opted to undertake a comprehensive assessment of the vulnerability of its fishery sector at the start of the project in order to identify the two highest priority commercial fisheries to address in the project. In South Africa the

fisheries that have been selected for VAs will include two communities engaged in small-scale and artisanal fishing activities, with particular emphasis on fisheries and communities on the west and south west coasts of the country, where rock lobster and linefish are the primary target species of fisheries of these scales. The South African small pelagic sector, targeting in particular anchovy and sardine, has been selected as the national fishery for this Output. The assessment will include examination of the different vulnerabilities of different role players such as the fishers, factory workers and management, and the mariculture sector along the BCLME section of the coastline.

Mariculture is seen as a potentially important vehicle for development in coastal areas in all of the countries and as a potential adaptation option for fisheries that may be negatively impacted by climate change. The potential importance of the currently under-developed mariculture sector in Angola is well recognized and a vulnerability analysis of the sensitivity and adaptation capacity of ecosystems and social systems along the Angolan coastline will be undertaken in order to assist in identifying areas for potential climate-proofed mariculture development. In Namibia and South Africa, the project will contribute to the existing initiatives to develop the sector by assessing its vulnerability to climate change as a first step towards considering adaptation options to increase its resilience.

Figure 2.2 Generic vulnerability framework that will be applied in the project.



Source: Cinner et al (2013)³²

The project will also create a regional network of stakeholders as a means to raise awareness and encourage stakeholder participation in vulnerability assessment workshops and other activities. The

³² Cinner, J., McClanahan, T., Wamukota, A., Darling, E., Humphries, A., Hicks, C., Huchery, C., Marshall, N., Hempson, T., Graham, N., Bodin, Ö., Daw, T. & Allison, E. 2013. Social-ecological vulnerability of coral reef fisheries to climatic shocks. FAO Fisheries and Aquaculture Circular No. 1082. <http://www.fao.org/docrep/018/ap972e/ap972e.pdf>

network will be aimed at middle and senior management in government, the commercial sector and NGOs, as well as community leaders. It will be built around the different information products that will be developed in Component 3 but the aim is to encourage it to become self-sustaining by the end of the project.

Output 1.1.2 Potential adaptation actions for the most vulnerable fisheries and fishery-dependent communities identified

Adaptation actions will be based on the premise that resilience is not an end-point but is dynamic and thus processes as well as actions will be important for adaptation. FAO has identified a range of good practices related to climate change adaptation in the fisheries sector. Adaptation actions that could be considered for implementation in the region, according to local circumstances, include, for example, ensuring that marine protected areas (MPAs) and other fish refugia, breeding areas or protected areas in estuaries and coastal areas are designed and managed to be resilient to the impacts of climate change, and adjusting fishing mortality to respond to climate-induced variability in production and distribution. For coastal communities, changes to the management of fisheries need to be agreed with communities and could include: protecting vulnerable ecosystems and habitats that provide protection to extreme events; flexibility in the regulations and changes in the type of fishing gears used by fishers to enable adaptation to changes in species composition of the local resources; improvements in post-harvest practices to minimize food safety risks due to increased temperatures and improve natural resource use efficiency in the face of reduced resources; climate sensitive spatial management. Information from the vulnerability assessments, and adaptation practices around the world and in the region, will be used to identify potential adaptation actions relevant within the BCLME context.

Output 1.1.3 Vulnerability assessments incorporated into the BCC and national planning and managing frameworks.

As a part of ensuring that the project outputs are sustained and that vulnerability assessment becomes an integral part of future planning processes and programmes, the most effective means to of integrating fisheries vulnerability assessments into relevant planning and management will be identified. These could include incorporating vulnerability assessments as a requirement in planning and management guidelines and procedures of the BCC and relevant national authorities. The project will support the creation or strengthening of existing national co-ordinating mechanisms to ensure cross-sectoral information flow for the duration of the project and thereafter. Sustainability of institutions and mechanisms will be an important consideration in this output and emphasis will be placed on utilising existing bodies and processes as far as possible, strengthening the existing ones when appropriate. At the regional level, BCC will establish a regional working group on “Incorporation of vulnerability assessments and adaptation plans for climate change”, with a fixed term of operation, in order to promote improved co-ordination of vulnerability assessments, planning and advice on project prioritisation across all fisheries/sectors, both during and after the project. The working group will address regional coordination but will also take advantage of the national multi-sectoral representation on the Commission to further national discussions and planning.

Outcome 1.2 Climate change adaptation in fisheries and fisheries-dependent communities is mainstreamed into broader sectoral, food-security and climate change frameworks within all three countries.

Output 1.2.1 Draft policies, or addenda to existing policies, submitted to the National Authorities and BCC for adoption.

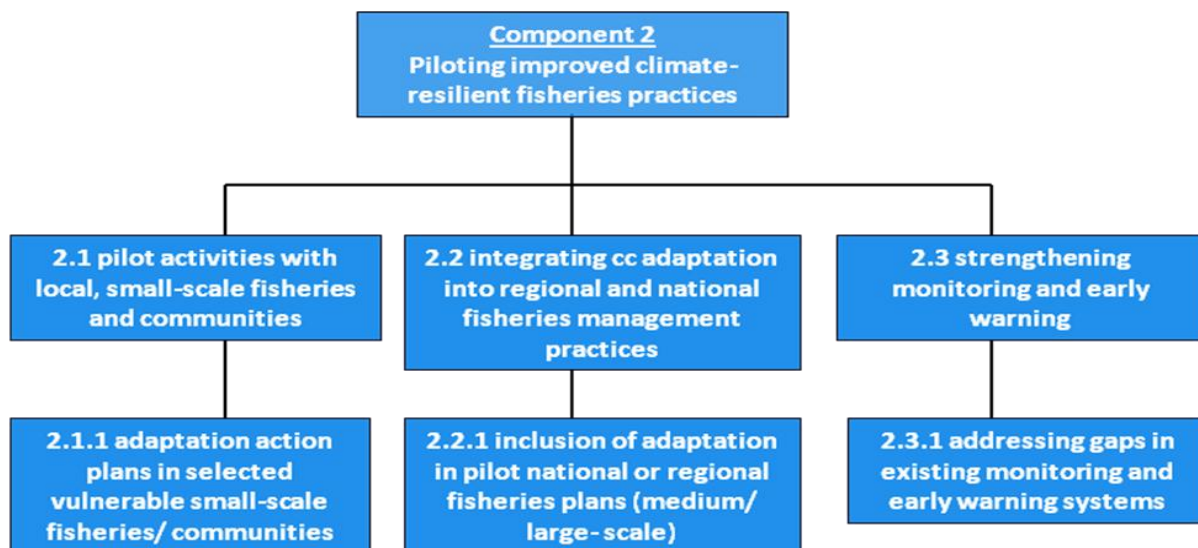
Building on the institutional and policy review undertaken during project preparation, the project will select key national legislation and policies or acts currently under development, government Departmental programmes and plans, and regional agreements and programmes and identify needs and opportunities for enhancing the mainstreaming of CC impacts on fisheries and mariculture. Thereafter, proposals will be prepared to respond to the gaps and requirements identified during the review. These forward-looking activities will be undertaken with participation by relevant authorities and officials to ensure pertinent, high quality proposals and the support of the mandated authorities for them. The preliminary analysis (Benkenstein, 2014) identified the following possible windows which could be the focus of this policy-oriented component of the project:

Angola	Current development plan covers the period 2013-2017. There is thus an opportunity to contribute to the following development plan over the project period
	Current development plan for artisanal fisheries covers the period 2014-2017, there is thus an opportunity to contribute to the subsequent artisanal fisheries development plan over the project period.
Namibia	Intends to develop coastal management legislation in order to support its National Policy on Coastal Management for Namibia (2013). This process is at a very early stage.
	Intends to revise the Marine Resources Act (2000) and its Marine Resources Policy (2004). This process is at a very early stage, but the Department of Fisheries and Marine Resources has conducted a gap analysis for the existing policy and legislative framework.
	Current national development plan (NDP4) covers the period 2012/13-2016/17, there is thus an opportunity to contribute to NDP5 over the project period.
South Africa	When introducing the MLRA Amendment Bill to Parliament, the Department of Agriculture, Forestry and Fisheries of South Africa observed that there may be a need for more wide-ranging revisions to the MLRA than those outlined in the Amendment Bill.
	Draft White Paper on the National Environmental Management of the Ocean calls for the development of ocean environmental legislation.

Output 1.2.2 *Regional and national inter-agency/inter-sectoral mechanisms strengthened to ensure fisheries and mariculture sectors are well-placed within national, provincial and local frameworks.*

In addition, in each of the three countries, the current mechanisms and structures that undertake planning and implementation for development, food security and climate change adaption in coastal areas will be examined to determine whether the fisheries sector is participating in them at an appropriate level and priority. Where found necessary or desirable, new mechanisms will be developed, or existing ones strengthened, so that fisheries and mariculture are well-placed within national, provincial and local frameworks. The same concerns about sustainability of any new mechanisms or institutions as were described for Output 1.1.3 above apply to this Output too..

Component 2: Piloting improved climate-resilient fisheries practices.



Under Component 1, the most vulnerable fisheries and fisheries-dependent communities in the Benguela countries will have been identified and high priority actions that will lead to adaptation and increased resilience will have been proposed. The objective of this Component is to put the proposed actions into practice in selected communities and fisheries in order to bring about measurable improvements in those pilots and also to learn lessons for application on a wider scale. It is anticipated that alternative livelihoods will be an important consideration for adaptation in all three countries and that mariculture could potentially be a significant source of alternative livelihoods in some cases in all countries. The Component will also address the need to improve detection and response to extreme and rapid-onset events, such as storms, as well as other perturbations in environmental conditions such as incidence of low oxygen and harmful algal blooms that frequently disrupt fisheries and mariculture in the region.

Outcome 2.1 Vulnerability to climate change and variability reduced in local, small-scale fisheries and fishing communities identified as being at high risk, considering all stages from production through to post-harvest and trade.

Output 2.1.1 *Community-based adaptation action plans developed and piloted in high-risk fisheries and communities*

Based on the results of the VAs conducted under Output 1.1.1 and through participatory processes, local adaptive management plans will be developed or revised to incorporate adaptation to CC impacts on local fisheries (Output 2.1.1). Communities identified as being particularly vulnerable in the VAs will be the target for these activities. The Output will address at least seven communities in Angola (one in each of the seven geo-political coastal zones of the country) and two in South Africa, both of which will have small-scale fisheries targeting resources such as rock lobster, linefish and abalone. The small-scale and artisanal fisheries are of a lower priority in Namibia and are not being included in this subcomponent.

The actions required to reduce vulnerability will be identified and planned making use of the information obtained from the VAs and consultations with communities. Many of them are likely to be drawn from, or based on, the examples of adaptive actions listed in the description of activities to be undertaken for Output 1.1.2 but also will include consideration of multi- and inter-sectoral activities as appropriate. Examples of related training are described under component 3. Support from local, provincial and national governments will be essential for any real progress with this Output and every effort will be made to ensure participation by these levels of government.

Adaptation plans will encourage participatory management. As a part of this, in South Africa, the project will encourage in-situ collection by communities of physical data from the inshore region to assist in improving understanding of climate change and variability, integrating fishers into research and scientific data collection and helping to empower them for greater engagement in co-management and adaptation planning. Local collection of catch and socio-economic data will also be implemented and integrated into communication processes as an education tool as well as for advising management. Given the uncertainty surrounding future climate change impacts and likely social and economic trends in each country, the approach will be to consider optimal approaches under different future scenarios, which will allow for adaptability in implementation. Scenario planning could be a useful tool in this regard.

In the Benguela region most of the fishery resources are widely distributed and shared nationally and, in some cases, bilaterally or regionally. In such cases the local plans will need to be integrated into and consistent with national and regional management plans to avoid conflicts and take into account drivers outside the immediate control of the communities. BCC will ensure integration at the regional level where required. In some cases, the inter-related management and adaptation plans will need to take into account rebuilding of over-exploited stocks, including the possibilities of compensation or alternative livelihoods for those directly affected.

Outcome 2.2 National and regional institutions have the capacities to integrate climate change adaptation (CCA) in fisheries in practice, based on thorough consultative planning processes.

Output 2.2.1 *Management plans developed or strengthened to incorporate monitoring and adaptive response to climate variability and change in at least 3 national or regional fisheries.*

To achieve this output, the best available scientific and stakeholder knowledge will be used in participatory processes to consider the ecological, social and economic implications of climate change in the mariculture sectors of the countries, the semi-industrial fishery in Angola, the small-pelagic fishery in South Africa (the second most valuable fishery in the country) and two national fisheries in Namibia that will be selected. The enhancement of management plans to deal more effectively with climate change and variability will be specific to each fishery and mariculture venture but are likely to include, for example, greater emphasis on spatially-based management, reducing the vulnerability of species on the edges of stock distributions, greater emphasis on maintaining a balanced size structure of wild populations and on ensuring ecosystem resilience, and selection of resilient species for mariculture, diversified livelihoods, integrated environmental monitoring systems, and improved food safety and post-harvest practices.

In all of these fisheries, a study will also be undertaken of the suitability and adequacy of existing institutional arrangements for management and the need for any modifications and improvements to take account of and ensure greater resilience to climate change and variability. Increased emphasis on co-management that this project will bring is likely to require modifying existing institutional structures to accommodate co-management better and, for communities, introduction of institutions at different scales to allow for local co-management and for that to be integrated into cluster management, where required, and into national management.

Development of the mariculture sector is seen as a high priority for social and economic development in all three countries. The project will explore the opportunities for and promote, where appropriate, mariculture as an adaptive strategy for fisheries at risk from climate change or other factors. Mariculture could be developed either as a communal or business enterprise depending on goals and the local context. The project will undertake strategic environment assessments to identify future suitability of sites for mariculture in the three countries. In Angola these assessments will build on the assessments of the sensitivity and adaptation capacity of

ecosystems and social systems undertaken there as part of Component 1. In order to ensure resilience of mariculture itself, the project will investigate opportunities to broaden the culture of local and indigenous species, encourage a transition from the culture of predatory fish to greater use of a diversity of omnivorous species and support the development of participatory integrated environmental monitoring systems. Rural agriculture and small home gardens are also potential alternative or supplementary sources of livelihood that can be considered.

Evaluation of the potential role of spatial management as an adaptive mechanism to allow for short and longer-term changes in distribution of important species will also consider the role of protected areas under climate change. Protected areas, including MPAs, can be an important management tool in fisheries, and are used as such particularly for the inshore fisheries in South Africa. The current and potential role of protected areas as management and conservation tools for this fishery and the impacts of climate change and variability on their effectiveness will be evaluated, including implications for local fishers and communities.

Outcome 2.3 Strengthened institutions and frameworks for effective monitoring and early warning to facilitate contingency planning at the regional and national levels.

Output 2.3.1 *National and regional frameworks for monitoring and disseminating information on extreme weather events and climate-induced risks in fisheries modified to address gaps in current coverage.*

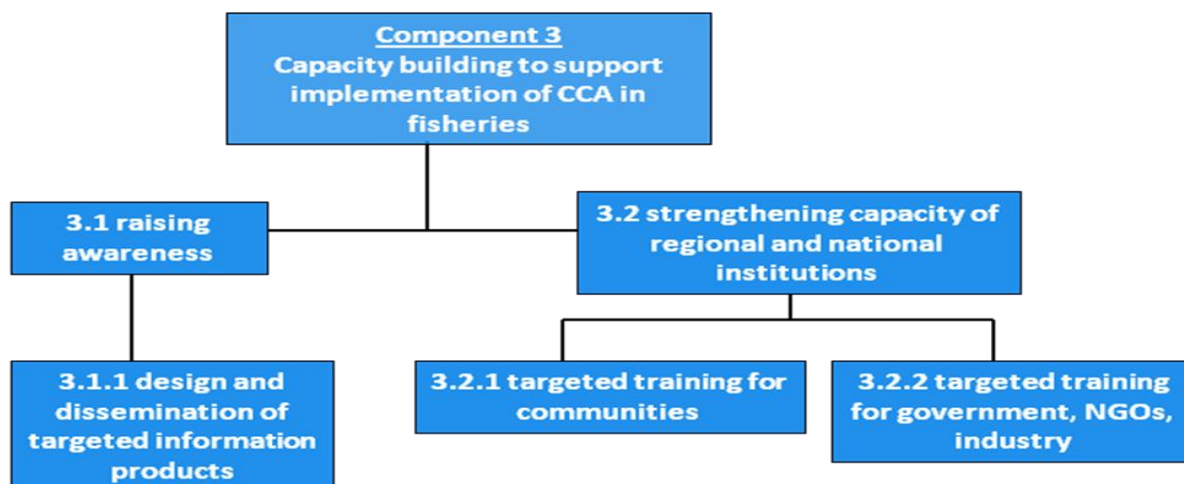
Existing national and regional frameworks for monitoring, processing and disseminating information on extreme weather events and climate-induced risks in fisheries will be reviewed to check whether the most important threats are being monitored and advance warning provided to all stakeholders as far as possible. There are existing weather services in Angola, Namibia and South Africa that can and do play important roles in monitoring and early warnings of extreme weather events. These are Inamet in Angola, the Meteorological Services of Namibia and the Fishers Observer Agency (FOA) in Namibia and the South African Weather Service in South Africa. Activities under this Outcome will be undertaken in collaboration and aligned with those existing services and other relevant environmental monitoring programmes. The activities will focus on identifying gaps and needs in the existing services and providing support to address those gaps.

Extreme weather events of concern to the fishing sector include storms, which have potential impacts on safety at sea, fishing gear, coastal infrastructure and communities. Rising sea temperatures coupled with low oxygen are suspected to have given rise to massive fish kills in Angola, while harmful algal blooms, sulphur eruptions and low oxygen events are frequently disruptive to fishing and mariculture operations in the region and can give rise to large-scale mortality in inshore resources and mariculture operations. The project will evaluate the extent to which existing monitoring and early warning systems are covering these threats and the areas where improvements are feasible and required. Project actions will include: building capacity in selected communities to undertake local monitoring, supply of equipment to the extent possible within the project (e.g. tide gauges, multiparametric buoys, weather stations on land); encouraging the creation of communication networks among fishing communities to spread information on extreme events; the provision of navigational and safety equipment to selected artisanal fishers in Angola and the training required to be able to use it effectively; and the application of oceanographic models in forecasting oceanographic conditions.

In parallel with the gap analysis and strengthening activities it will be necessary to determine the thresholds that would trigger warnings of imminent threatening events that are being considered for adding to existing services. This will be done through a review of available information on, for example, equivalent practices in other regions and countries.

The project will also facilitate the development of contingency plans for extreme and unfavorable coastal conditions in selected fisheries and sites. In Angola, the capacity of fisherman in the use of navigation and communication systems will be strengthened to increase safety at sea, increasing their resilience to extreme weather conditions.

Component 3: Capacity building and promotion of improved climate-resilient fisheries practices.



The existing understanding in the region of the impacts of climate change and variability on fisheries social-ecological systems is limited and the capacity amongst all the stakeholders to prepare for and respond to those impacts is therefore also typically low. This includes government departments with primary responsibilities for fisheries and ecosystem-based management of the oceans. One indication of the low level of awareness has been the limited interest in the project of the commercial fisheries sector in the region, reflected in poor attendance by the sector at the national workshops in all countries. Informal discussions on the low interest level indicate that, notwithstanding significant climate driven changes in several important fisheries in recent years, the industry as a whole is preoccupied with what it perceives to be higher priority concerns and does not believe that there is any need to move from the ‘business as usual’ approach that has relied on ad hoc responses to serious perturbations. The objective of this Component is to increase both awareness and capacity to enable and promote a proactive, forward-looking approach to climate change. It will be done through a broad strategy including activities specially targeted at the different stakeholders and roles.

Outcome 3.1 Awareness, knowledge and understanding of climate change risks and best adaptation practices in fisheries strengthened

Output 3.1.1 *Targeted, user-friendly information produced and disseminated to national and regional stakeholders, and to local communities in the most highly vulnerable areas.*

Activities will include collation of existing information products *on impacts, risks and vulnerability to climate change and variability and adaptive responses* and development of new ones around identified gaps. Information to be used to achieve this will incorporate the results and lessons-learned from the project as they are produced. The information will be processed and packaged in forms most useful and easily absorbed by the target audiences and will include manuals targeted at specific audiences, audiovisual productions, leaflets and pamphlets, scientific publications and workshops or seminars. The information will be produced and disseminated in forms that facilitate action rather than lead to paralysis. Activities will also be linked to any existing awareness and training activities where appropriate. In addition, partnerships will be established with local media associations such as radio and film associations and national broadcasting corporations to facilitate

the effective dissemination of information. These media will provide a useful means of reaching illiterate groups of stakeholders.

Towards the end of the second year, the project will be generating valuable information and results that, correctly analysed and presented, will be useful for raising awareness and understanding amongst stakeholders. Emerging information will be packaged as targeted, and user-friendly information products and disseminated to stakeholders. Two such products will be produced and distributed in each country in each of years 3 to 5 of the project, as well as one product for regional use each year.

Output 3.2.1 Training on climate change risks and adaptation conducted in selected communities.

Activities under this subcomponent will be an extension of the information dissemination under subcomponent 3.1. They will include consultation with communities and institutions on the types of skills and capacity they require and the formulation and implementation of training activities aimed at meeting those needs (Output 3.2.1). The details cannot be formulated before the results of the Component 1 vulnerability analyses are known and without consultation with target groups but it is anticipated that training activities could include, for example, monitoring and interpreting trends in key species, sea temperature and other environmental indicators; adaptive responses in local management plans to changing conditions, effective participation in co-management, and similar themes. In the small-scale and artisanal fisheries and communities in Angola, capacity building will include awareness training and workshops for fishers and women to improve existing post-harvest techniques (predominantly salting and drying) and the introduction of new technologies to achieve better end-product quality. In the case of small-scale aquaculture, capacity-building will cover adaptation and resilience-building through approaches such as management of water resources to minimize the impacts of climate change and strategies for selecting and changing farming location as required. The project aims to provide at least 300 stakeholders, distributed across all target communities, with such training. As with other subcomponents, opportunities for collaboration with complementary programmes and initiatives will be pursued, for example the Responsible Fisheries Training Programme and the Aquaculture Training Programme run by WWF in South Africa and any being undertaken through the private sector or government in any of the countries.

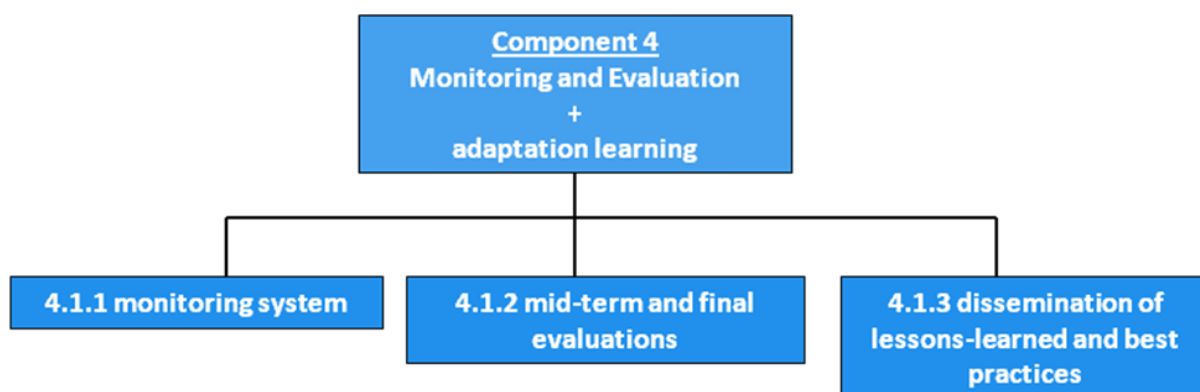
There has been considerable interest shown during project preparation for implementing exchange programmes for sharing information, experiences and lessons learned between different groups with similar interests at a regional or national level. Opportunities for most effective use of such exchange programmes will be explored and implemented, for example between artisanal fishers from different regions in Angola, mariculturists across the three countries, and others. The project will implement such exchange programmes for at least 60 people from all of the three countries.

Output 3.2.2 Targeted training on climate change risks and best adaptation practices in fisheries for stakeholders from government, universities, non- governmental organizations and industry conducted.

As reported in the introduction to this Component, lack of awareness is not limited to community and small-scale stakeholders and is a problem in the commercial and industrial sectors too, as well as amongst politicians and government authorities. Little progress will be made in increasing resilience to climate change unless awareness and understanding can be increased amongst these groups, leading to appropriate and sustained attention to the threats and opportunities of climate change. Focused workshops will be arranged to inform target groups, with emphasis on politicians and senior managers in government as well as industry leaders. The content of these workshops will include experiences and lessons learned internationally, including presentation of the latest IPCC conclusions and recommendations and issues being addressed by the UNFCCC. It will also encompass the results

and lessons being learned from the project with a particular emphasis on multi-sectoral approaches to climate change adaptation and ensuring fisheries and mariculture are given due attention. It is anticipated that two workshops will be held per year from years 3 to 5 and that they will involve at least 150 stakeholders across the three countries.

Component 4: Monitoring & Evaluation and adaptation learning



The objective of Component 4 is to insure a systematic results-based monitoring and evaluation of project progress towards achieving project outputs and outcome targets as established in the Project Results Framework, and in line with FAO's and GEF's M&E standards and guidelines. It also serves to promote the wider dissemination of project results for replication in other large marine ecosystems, and climate change adaptation networks. For further details on M&E activities please see section 4.5 project monitoring, section 4.6 project evaluations, and section 4.7 communication of project results and visibility.

Outcome 4.1. Project implemented and monitored effectively and efficiently and best practices and lessons learned disseminated.

Output 4.1.1 *Project monitoring system established.*

Establishing this project as a learning opportunity requires an effective project monitoring and evaluation system. An M&E expert will be contracted at the onset of project implementation, to set up an M&E system that the project team can easily implement at regional and national level, based on the proposed results framework and M&E plan described in section 4.6.

Output 4.1.2 *Midterm and final evaluations conducted.*

Two independent project evaluations will be conducted at project mid-term (after 2 years of project implementation) and at project completion. More details are provided in section 4.7

Output 4.1.3 *Project-related "best-practices" and "lessons-learned" assessed, published and disseminated*

Work on addressing climate change in fisheries and mariculture is taking place in other African countries but this project will be the largest and most focused that has been implemented on the continent up until now. The project will therefore ensure that the conclusions and lessons being learned in understanding vulnerability and increasing resilience in the Benguela Current are made available to wider audiences in Africa such as the other African LME projects, regional fisheries

bodies and economic groupings, and others, while at the same time learning from experience being gained by these groups.

Information dissemination and exchange will be done through: creation and maintenance of a website linked to the existing BCC website; participation by a member of the BCC Secretariat or other nominated representative of the Commission in at least six relevant meetings, workshops or conferences of regional bodies in order to share the new knowledge. A communication strategy will be developed at the beginning of the project and updated regularly to guide the communication of lessons learned the best practices generated by the project.

2.4 Adaptation benefits

The **adaptation benefits** to be generated by the project include:

- climate change adaptation actions in fisheries and fishery dependent communities incorporated into key policies and programmes, with at least one key policy or addenda to existing policies undergoing adoption in all 3 countries by the end of the project.
- 9 most vulnerable small-scale fishery communities in Angola and South Africa with adaptation plans under implementation.
- climate monitoring and early warning systems providing timely and relevant information to target fishery communities and relevant stakeholders in the 3 countries.
- at least 3 national or regional fisheries management plans revised to incorporate response to climate variability and change
- at least 400 people from small-scale fishery communities, government, universities, non-governmental organizations and the industry have received targeted training on climate change risks and adaptation.

It will be too early at the end of this project to detect changes in the vulnerability of fishery resources and ecosystems as a result of the progress made through the project but there will be improvements in the management systems. Similarly, there will not have been sufficient time to detect significant improvements in livelihoods and food security of coastal inhabitants, but contribution will have been made to improving stability and sustainability of benefits being derived from fisheries.

2.5 Cost effectiveness

Climate change has been recognized as a threat only relatively recently within fisheries and aquaculture and there is a common tendency to try to address it as a stand-alone issue requiring stand-alone solutions. Such an approach would require the creation of new, dedicated institutions and processes, as well as processes for ensuring interaction between the new structures and the traditional ones responsible for sectoral management. This would be a slow and costly process. It would also be inconsistent with an ecosystem approach to management, which requires integration from planning all the way through to monitoring of implementation. In contrast, the project will be following an integrated approach throughout and will, wherever possible, work with and through existing institutions, structures and processes in order to build resilience and reduce vulnerability of the Benguela Current marine fisheries systems to climate change. This will be the most cost-effective approach to achieve the objectives of the project and the one most likely to succeed.

Attention is being given to impacts of climate change and variability on fisheries systems in the region but in an incomplete and frequently uncoordinated manner. There are a number of

institutions, organizations and stakeholders that are engaged in climate-change related activities of differing scales and the project will work with these multiple players where-ever possible, complementing and strengthening their efforts in a cost-effective manner, rather than attempting to start new initiatives or to compete with existing ones. Good progress was made in engaging with these partners in all three countries during the project preparation phase and these efforts will be continued and expanded during implementation.

Similarly, starting with the BCC itself, the project will work with and through existing multi-sectoral platforms and processes in its work to ensure the inclusion of fisheries and mariculture in broad-based, multi-sectoral planning and programmes. It is a generally recognized challenge throughout the world to achieve effective multi-sectoral approaches, and resistance and inertia to change from sectoral interests, including government departments is often one of the major obstacles to achieving multi-sectoral, ecosystem-based management³³. It is therefore essential that the project does not try to initiate interaction between the fisheries and other sectors from the beginning but searches for and makes use of opportunities to build on progress already being made, at local, provincial, national and regional levels. Working with the BCC, which includes committed representatives from the relevant government departments and sectors in each of the countries, will be a key entry point for identifying and facilitating cooperation with existing multi-sectoral forums and initiatives at the different geo-political scales, thereby increasing cost-effectiveness.

2.6 Innovativeness

The overall approach and the goals of the project are innovative in themselves and will frequently require innovative approaches if the project is to be successful. The vulnerability assessments are a key starting point for several of the project outputs. Vulnerability assessment is now a common tool for climate change adaptation throughout the world and there are many models and approaches already available. However, the social-ecological and political context of the three Benguela countries is unique and none of the existing methods will be directly applicable in the project. Further, the fisheries systems of the Benguela coast are being impacted by many drivers: economic, demographic, political, health-related and others, of which climate change and variability is only one. Stakeholders, including government authorities, will need to be confident that the vulnerability assessments and the adaptive actions undertaken to build resilience in the pilot areas take cognisance of and are complimentary to the needs and initiatives to increase resilience to these other drivers as well. Ensuring this synergy will require innovative approaches to the assessments and to the planning and implementation of adaptive measures.

Further, truly integrated approaches to governance and management of oceans remain a challenge and there are few, if any, examples where this has been fully achieved. The BCC is innovative in its design and mandate¹⁸ and the project will build on this innovativeness and extend it to national and provincial planning and programmes in order to ensure that adaptation to climate impacts in fisheries is an integral part of broad, multi-sectoral initiatives in the individual countries and region to foster development and adapt to climate change.

Finally, the project will be striving to empower local communities to be more active and proactive in monitoring and managing their fisheries systems, while also participating in wider management of shared resources, in order to strengthen their resilience. In a region where fisheries governance is still predominantly top-down this will require innovative approaches to capacity-building,

³³ Cochrane, K.L., G. Bianchi, W. Fletcher, D. Fluharty, R. Mahon and O.A. Misund. 2014. Regulatory and governance frameworks. In *Marine Ecosystem-Based Management*, Eds: M.J. Fogarty and J.J. McCarthy. The Sea 16. Harvard University Press, Cambridge. 77-119.

institutional strengthening and fisheries management, as well as mariculture development and governance that, by the end of the project, should serve as examples to other regions facing similar challenges.

SECTION 3 - FEASIBILITY

3.1 Environmental impact assessment

Based on the project objective, outcomes and outputs, no adverse environmental or social impacts are likely. On the contrary, the project and the resources invested are expected to have positive impacts on the sustainability of the socio-ecological system. The investments in designing locally adaptive management plans and strategies and furthering the regional and national implementation of the ecosystems approach to fisheries will lead to more sustainable resource management as well as increased climate change resilience within the BCLME. In terms of the outputs and national activities to be implemented under Component 2, “Piloting of improved climate-resilient fisheries practices”, the specific action plans that will be developed will require adequate screening before implementation. This will be done in line with the national environmental impact assessment fisheries policies as well as the EIA Guidelines for FAO’s field projects during project implementation.

3.2 Risk Management

Table 3.1 describes the risks to successful implementation of the project and the strategy that will be pursued by the project to minimise those risks.

Table 3.1 Risks to the project, their severity and the approaches to minimising them.

Risk	Level of risk	Mitigation strategy
Inability to develop and implement a sufficiently holistic vulnerability assessment methodology, resulting in a failure to detect more obscure vulnerabilities in the fisheries systems.	Low	The basic IPCC vulnerability framework, expanded to give closer attention to environmental/ecosystem vulnerability is a well-established and applied standard that will be used in the project. Considering the diverse nature of the fisheries systems in the three countries, detailed application of the framework will be tailored to take into account specific characteristics and contexts of each case. Assessments will give comprehensive consideration of impacts and vulnerabilities to all primary threats, including but not limited to climate threats. The participative processes employed should ensure that all aspects are covered.
Insufficient time dedicated by collaborating and partner organizations and agencies to successfully implement the project components.	Low	During the project preparation phase, time availability and commitments have been discussed among the participating organizations and agencies to ensure that none is carrying a heavier burden than it can sustain. The staffing structure, including national teams, has been designed to provide support and ensure delivery.
Inadequate participation by all stakeholder groups to identify and prioritize adaptation needs in a sufficiently objective manner.	Medium	Careful attention will be given to ensuring the involvement of all relevant stakeholders at an early stage and throughout the project implementation process. Awareness creation and engagement of stakeholders from commencement of the project and for its duration will encourage engagement. Communities have frequently been overlooked in fisheries management and development and it is anticipated that, with sensitive and participatory approaches, project activities will generally be

		welcomed by them.
Some stakeholders (e.g. small-scale fishers) lack sufficient negotiation strength vis-à-vis others.	Medium	The stratified approach of the project, in which separate activities will be directed at communities and at national and regional fisheries and stakeholders will ensure that small-scale stakeholders and other sometimes marginalized groups will be the primary drivers of activities for their benefit. This, plus capacity building in co-management, will strengthen their capacity to engage more effectively in activities aimed at scaling up and integrating local management with national and regional management plans, when required. The project will also clearly indicate the contributions of the small-scale sector to food and livelihoods security and economic development. Meetings, workshops and other consultative events will be professionally facilitated to ensure full and fair participation and influence.
Climate-induced events, such as shifts in shared stocks, occur faster than the project is able to prepare and plan for.	Medium	The vulnerability assessments during project preparation and the more targeted and detailed ones under Component 1 will identify any particularly urgent cases. These will be prioritised in the pilots and other activities. The project is aiming to build the capacity of fishers, communities, and regional management to better deal with the current climate variability including extremes and future climate change through adaptation and resilience-building practices.
Climate-induced events cannot reliably be distinguished from changes caused by other factors such as overfishing or short-term variability.		Local, national and regional fisheries are exposed to a number of threats and it is frequently difficult or even impossible to isolate the direct impacts of any one of those. The vulnerability assessments will consider vulnerability to other drivers and will consider climate related threats within the context of overall vulnerability. In adaptation planning and pilot implementation, adaptive actions and measures taken to increase resilience will, as far as possible, take into account and complement measures required to address other threats.

3.3 Fiduciary risk analysis and mitigation measures

A fiduciary assessment of the Benguela Current Commission (BCC) will be conducted to assess BCC's capacity for project execution management and identify any risks to be addressed in order to comply with fiduciary standards. The assessment will be carried out before an execution agreement between FAO and BCC is concluded.

SECTION 4 - IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

4.1 Institutional arrangements

(Please also see section 1.2)

The project will be executed through the regional body, the **Benguela Current Commission (BCC)**. The BCC is a multi-sectoral and inter-governmental agency established by the governments of Angola, Namibia and South Africa and mandated with the responsibility for coordinating shared management of the Benguela Current Large Marine Ecosystem (BCLME) and its marine resources. The BCC organizational structure includes:

- The Ministerial Conference, the highest decision-making body of the BCC, with each country's participation led by an appointed Minister. The primary function of the Ministerial Conference is to set the policy direction of the BCC – including the evaluation and approval of the SAP – and to take necessary actions to facilitate its implementation.
- The Management Board/Commission responsible for: coordinating the implementation of the Strategic Action Programme and the Benguela Current Convention; and advancing and representing the common interests of the Parties in matters concerning the BCLME. It consists of national delegations from each of the participating countries. Usually, there are representatives from each of the relevant ministries (e.g. the fisheries, mines or minerals, works and transport and the environment ministries) in each of the national delegations. The Management Board is led by a National Director, Director General or Permanent Secretary – or his or her nominee. It ordinarily meets once a year.
- BCC Secretariat. The Management Board is supported by a Secretariat based in the coastal town of Swakopmund, Namibia. The Secretariat is headed by an Executive Secretary and provides services to the Ministerial Conference and Commission in order to facilitate the execution of BCC functions. It formulates work programmes, budgets and reports, and negotiates with international cooperating partners to support the implementation of the SAP.
- Committees. The Commission also comprises three permanent committees – the Ecosystem Advisory Committee, the Finance and Administration Committee and the Compliance Committee – which bring together national experts in relevant fields and provide advice and recommendations to the Commission. The committees work mainly through working groups, which form the bridge for cooperation between players in the different countries of the BCC.

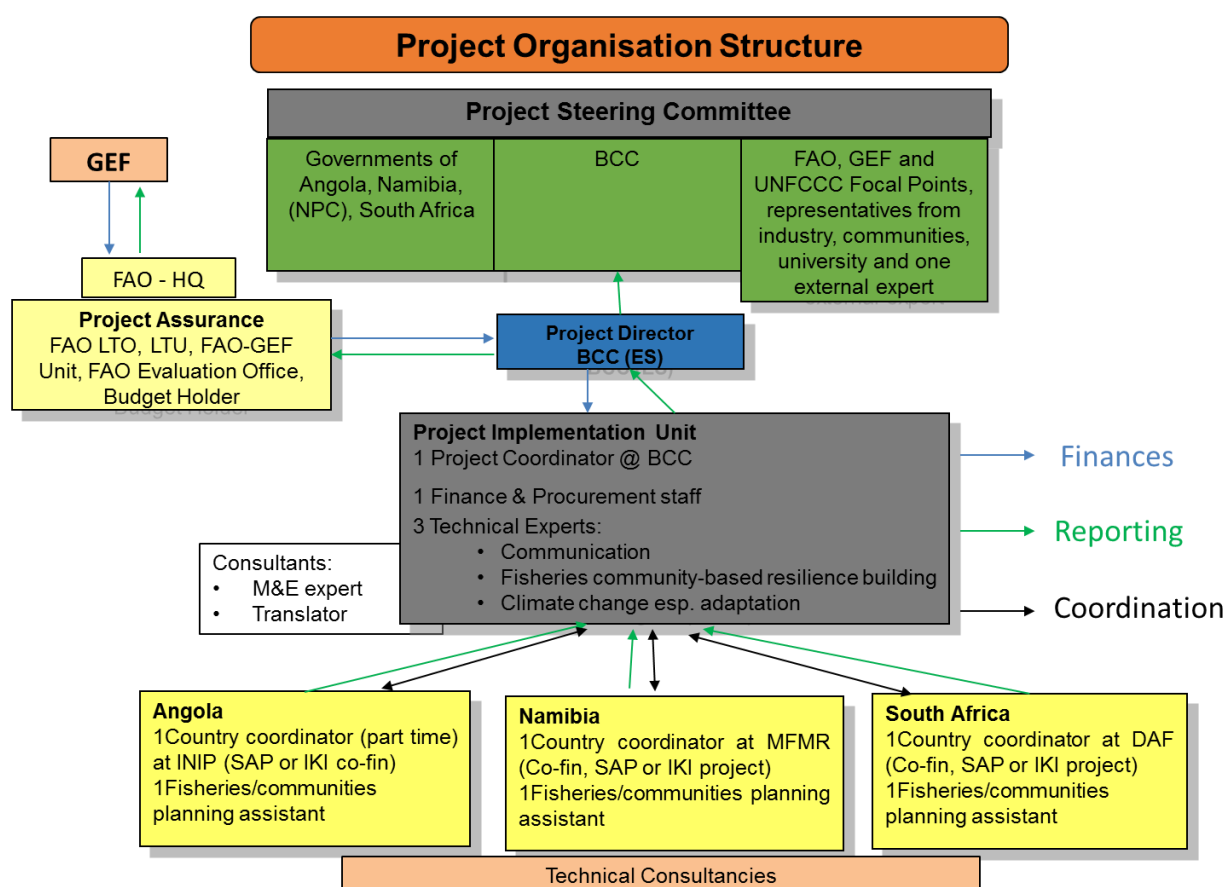
At national level, the respective **fisheries and mariculture government departments and environmental ministries** will be the key project partners and will share the responsibility with BCC for the execution of the project's national activities. They will ensure close collaboration with key government departments responsible for national environmental management and climate change coordination - the Ministry of Environment and Tourism in Namibia, the Department of Environmental Affairs in South Africa and the Ministry of Environment in Angola..

The Food and Agriculture Organization (FAO) will be the GEF Agency responsible for supervision, and provision of technical guidance during the implementation of the project.

4.2 Implementation arrangements

The project will be managed through implementation arrangements and a project organisation structure depicted in the figure (Figure 4.1) below.

Figure 4.1: Agreed Project Organisation structure and flows of responsibilities (arrows)



Project Steering Committee

The Management Board of the BCC will take up the Project Steering Committee (PSC) function and necessary technical task forces will be established if so required during the implementation phase. Where the GEF national focal point is not currently serving on the Management Board (i.e. South Africa), such a focal point will be additionally invited to serve on the PSC. Additional experts from industry, communities, university and others will be invited to also serve on the PSC. In the context of this project, the PSC will be the policy setting body with regard to all issues affecting the achievement of the project's objectives. The PSC will:

- Provide guidance to ensure that project implementation is in accordance with the project document;
- Review, amend if appropriate, and approve any proposed revisions to the project - project results framework and implementation arrangements;
- Review, amend (if appropriate) and endorse all Annual Work Plans and Budgets;
- Review project progress and achievement of planned results as presented in six-monthly Project Progress Reports, Project Implementation Reviews (PIRs) and Financial Reports;
- Provide inputs to the mid-term and final evaluations, review findings and provide comments;
- Advise on issues and problems arising from project implementation, submitted for consideration by the project stakeholders; and
- Facilitate cooperation between all project partners and facilitate collaboration between the project and other relevant programmes, projects and initiatives in the region.

PSC meetings will be held once a year – if possible back-to-back with the Management Board’s regular meetings.

Project Executing Partner

As the project executing partner, the Benguela Current Commission (BCC) through the BCC Secretariat, will be directly responsible for implementation of project activities, day-to-day monitoring as well as financial management and purchase of goods and services (procurement).

BCC will enter into an Execution Agreement with FAO allowing for the purchase of goods, minor works, and services needed to execute the project. FAO will ensure that BCC executes the project in accordance with provisions of the Execution Agreement and will ensure compliance with GEF minimum fiduciary standards. The Execution Agreement will outline in detail the roles and responsibilities of BCC and procedures with respect to financial management, procurement, recruitment, project progress reporting, financial reporting and audit, copyright, and other legal aspects of collaboration.

BCC will establish and oversee a **Project Implementation Unit (PIU)** which will be hosted at BCC Headquarters in the coastal town of Swakopmund, Namibia. The PIU will consist of a Regional Project Coordinator who will provide technical and administrative leadership to the PIU, a Finance and Procurement officer and 3 technical staff. A part-time M&E expert will be hired to assist the PIU with developing a strong and practical M&E system. The Project Director will be the Executive Secretary (ES) of the BCC, representing the BCC Management Board. Under the supervision of the Project Director, PIU will:

- a) undertake the preparation of Annual Work Plans and detailed Budgets (AWP/B) and submit these for approval by FAO and the PSC;
- b) coordinate the implementation of the AWP/B and provide technical guidance in the execution of all activities at regional and national level;
- c) manage the project budget in accordance with approved AWP/B, taking into account the decisions of the PSC;
- d) prepare terms of reference (TOR) for consultancy services, contracts documents including Letters of Agreements with other executing partners as necessary, and equipment procurement documents;
- e) implement the monitoring and evaluation plan;
- f) prepare six-monthly Project Progress Reports (PPRs) and financial statements of expenditures and give inputs in the preparation of the annual Project Implementation Review (PIR) by the FAO Lead Technical Officer. Ensure that all co-financing partners provide information on co-financing disbursed during the course of the year for inclusion in the PIR;
- g) coordinate the project with other related on-going activities and ensure a high degree of inter-institutional collaboration;
- h) arrange for all PSC meetings, regional workshops and other activities; and
- i) assist in the organization of midterm and final evaluations.

National Executing Partners

At national level, the project will be executed by the following national departments who have been instrumental in implementation of all BCC projects:

- Instituto Nacional de Investigação Pesqueira (INIP) and Instituto de Desenvolvimento da Pesca Artesanal (IPA) in Angola;
- Ministry of Fisheries and Marine Resources (MFMR) in Namibia; and
- Department of Agriculture, Forestry and Fisheries (DAFF) in South Africa.

These national departments will set-up project coordination teams, led by the national coordinators under the project. The national coordinator will be responsible for the project implementation and

coordination at national level, working with the BCC project implementation unit. Each fisheries and mariculture department will also have one technical expert in order to adhere to the strong capacity-building aspect of this Project, as well as to combine technical and administrative tasks.

The national executing agencies will provide technical, administrative and financial support for the project in the form of in-kind staff-time, technical reports, data and meeting space. The executing agencies will also assist in cross-sectoral coordination and the mainstreaming of fisheries and mariculture climate change considerations within departmental planning processes as well as across all national development and planning policies and frameworks (Component 1); developing local adaptive management plans for the fisheries and mariculture sectors and with capacity development (Component 2 and 3) through knowledge management and the piloting of climate change best practices.

Project implementation at regional and national level will be supported by a suite of international and national consultants and contractors to deliver on specific technical components of the project. In addition, specific Technical Task Groups will be established as necessary to provide technical inputs and guidance in the implementation of the project.

At local level, stakeholder committees will be established within the fisheries committees. Stakeholder Representative from the different CBOs, NGOs and fishing sectors, associations and joint ventures (artisanal, small-pelagic etc.) will be elected where necessary in order to ensure the effective and broad-based stakeholder participation in the implementation of national activities, particularly the implementation of the pilot adaptation plans. Local governing authorities will be involved in stakeholder development and networking as well as in the implementation of community adaptation plans. Stakeholder committees and representatives will be chosen and developed during the project implementation phase.

GEF Agency

The Food and Agriculture Organization (FAO) will be the GEF Agency of the Project. FAO will provide supervision and technical guidance services during the project execution. Administration of the GEF grant will be in compliance with the rules and procedures of FAO, and in accordance with the agreement between FAO and the GEF Trustee. Specifically, FAO will:

- Enter into an Execution Agreement with BCC as the executing agency responsible for the day-to-day management of the project. The Agreement will outline in detail the roles and responsibilities of FAO and BCC and procedures with respect to financial management, procurement, recruitment, project progress reporting and audit, copyright, and other legal aspects of collaboration;
- Manage and disburse GEF resources for the project to BCC in accordance with the policies and procedures of FAO;
- Oversee project implementation in accordance with the project document, approved work plans and budgets and the policies and procedures of FAO;
- Provide technical guidance and backstopping to ensure that appropriate technical quality is applied to all activities and outputs;
- Carry out at least one supervision mission per year;
- Inform the GEF Secretariat whenever there is a substantive co-financing change or any change (i.e. one affecting the project objectives, the underlying concept, scale, scope, strategic priority, conformity with GEF criteria, likelihood of project success, or outcomes of the project);
- Report on project progress through the completion of annual Project Implementation Review and submit it to the GEF Secretariat;

- Ensure that the FAO Office of Evaluation arrange for independent mid-term and terminal evaluations; and
- Provide financial reports to the GEF Trustee in accordance with the Financial Procedures Agreement between FAO and the GEF Trustee.

As a regional project, **the FAO Subregional Coordinator in the Subregional Office for Southern Africa**, assisted by the FAO Lead Technical Officer (Senior Fishery Officer in SFS) and Lead Technical Unit (Fisheries and Aquaculture Economics and Policy Division), will be the Budget Holder (BH). The Subregional Coordinator will be responsible for the management of the GEF resources and all aspects in the Execution Agreement that will be signed between FAO and BCC. As a first step in project start-up, the Subregional Coordinator will establish an interdisciplinary Project Task Force within FAO to guide the implementation of the project. The FAO Subregional Coordinator, in consultation with the FAO LTO and LTU, will in particular:

- 1) review and give no-objection to AWP/B submitted by BCC;
- 2) disburse GEF funds to BCC in accordance with the provisions of the Execution Agreements. Disbursements will be based on satisfactory reporting on project progress and statement of expenditures (see section 4.3.6 on disbursements and section 4.5.3 on reporting);
- 3) supervise BCC's financial management and use of resources (see section 4.3.6 on financial management and section 4.5.3 on reporting), including clearance of Budget Revisions in consultation with the FAO Lead Technical Officer (LTO see below) for submission to the FAO GEF Coordination Unit for approval; and
- 4) supervise contracting and procurement processes executed by BCC (see section 4.4 below).

All reports submitted by BCC will be cleared by the BH, and submitted to the FAO GEF Coordination Unit for final approval and uploading on the FAO Field Programme Management Information System (FPMIS).

The FAO Lead Technical Unit will be the Policy and Economics Division (FIP) Department of Fisheries & Aquaculture at the FAO Rome Office and a **Lead Technical Officer** with specific expertise in an ecosystem approach to fisheries management will be appointed in the FAO Subregional Office for Southern Africa. The LTU will, via the LTO, provide technical advice and backstopping to the project and support the LTO in responding to requests from BCC for guidance on specific technical issues during project execution. The LTO, supported by the LTU when needed, will:

- represent FAO in the Project Steering Committee and interview and selection panels for key project positions to be financed by GEF resources;
- participate in annual project progress review and planning workshops, and review, provide comments, and advise the FAO Subregional Coordinator on giving no-objection to AWP/B in consultation with the LTU and the FAO GEF Coordination Unit;
- review and clear (or ensure clearance by relevant FAO technical officers) TORs for consultancies and contracts to be performed under the project and to CVs and technical proposals short-listed by BCC for key project positions, goods, minor works, and services to be financed by GEF resources;
- review and clear (or ensure ensure clearance by the relevant FAO technical officers) final technical products delivered by consultants and contract holders financed by GEF resources before the final payment can be processed;
- review and clear project progress reports submitted by BCC to the FAO Subregional Coordinator;

- prepare annual Project Implementation Review (PIR) reports with inputs from the BCC, to be submitted for clearance by the FAO GEF Coordination (TCI). TCI will subsequently submit the PIR to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The LTO must ensure that BCC has provided information on co-financing provided during the course of the year for inclusion in the PIR;
- field annual (or as needed) project supervision missions;
- review TORs for the mid-term evaluation, participate in the mid-term workshop with all key project stakeholders, develop an eventual agreed mid-term adjustment plan in project execution approach, and supervise its implementation.

The **FAO GEF Coordination Unit (TCI)** will review and approve project progress reports, financial reports and budget revisions. The FAO GEF Coordination Unit will review and clear annual PIRs and undertake supervision missions if considered necessary. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the FAO GEF Coordination Unit. The FAO GEF Coordination Unit will also participate in the mid-term and final evaluations and the development of corrective actions to mitigate eventual risks affecting the timely and effective implementation of the project. The FAO GEF Coordination Unit will, in collaboration with the FAO Finance Division, request transfer of project funds from the GEF Trustee based on six-monthly projections of funds needed.

The **FAO Finance Division** will prepare and submit annual Financial Reports to the GEF Trustee and, in collaboration with the GEF Coordination Unit, call for project funds on a six-monthly basis from the GEF Trustee.

4.3 Financial plan

4.3.1 Financial plan (by component, outputs and co-financier)

The total cost of the Project will be USD 23.866 million, to be financed through a GEF grant of USD 4.725 million and USD 19.141 million in co-financing. Table 4.1 provides a breakdown of funding sources by component, output and co-financier.

Table 4.1. Project Cost by Component and Source of Co-financing (USD)

Component	Component 1: Integrating fisheries climate change considerations into fisheries policies and planning		Component 2: Piloting of improved climate- resilient fisheries practices.			Component 3: Capacity building and promotion of improved climate- resilient fisheries practices		Component 4: Monitoring & Evaluation and Adaptation Learning	Project Management	Total
Outcome	1.1	1.2	2.1	2.2	2.3	3.1	3.2	4.1		
GEF	911,000	285,700	728,790	324,000	354,500	239,500	834,410	802,100	245,000	4,725,000
BCC	75,000	200,000	75,000	100,000	200,000	50,000	100,000	800,000	1,400,000	3,000,000
Angola	1,000,000	300,000	1,000,000	300,000	100,000	300,000	500,000	800,000	700,000	5,000,000
Namibia	800,000	300,000	1,200,000	300,000	100,000	300,000	500,000	800,000	700,000	5,000,000
South Africa	1,000,000	200,000	1,500,000	100,000	100,000	300,000	400,000	700,000	700,000	5,000,000
Ecofish	100,000									100,000
FAO	200,000	100,000	150,000	50,000	100,000	100,000	100,000	75,000	85,000	960,000
GULLS	80,000							20,000		100,000
Masifundise	3,000		3,000							6,000
Total	4,169,000	1,385,700	4,656,790	1,174,000	954,500	1,289,500	2,434,410	3,997,100	3,830,000	23,891,000
%	17%	6%	20%	5%	4%	5%	10%	17%	16%	100%

4.3.2 GEF/LDCF/SCCF inputs

The requested GEF grant will be allocated as specified in the output based budget and budget notes (see Annex 3).

4.3.3 Government inputs

The three governments directly participating in the project, Angola, Namibia and South Africa, will contribute a total of USD 15 M of in-kind support. The government in-kind co-financing will mainly consist in staff time, office space and utilities, and support for local travel. The government cash co-financing will support all four project components.

4.3.4 FAO inputs

FAO co-financing of USD 960 000 is divided into USD 385 000 in-kind and USD 575 000 cash. FAO co-financing will be used to support technical assistance.

- The FAO/Norway *EAF-Nansen Project* is working with the BCC in the development of a tracking tool to monitor the implementation of an ecosystem approach to fisheries management; enhancing the integration of the human dimension of EAF into fisheries management and including the identification of appropriate institutional arrangements. Climate change pervades all of these activities and it will be important for these two projects to cooperate. The project will provide an estimated USD 100 000 in co-financing towards understanding the bio-physical impacts of climate variability and change in the Benguela system and linking these to an ecosystem approach to fisheries.
- The 10-year (2009-2018) global Japanese-funded FAO project, entitled *Fisheries Management and Marine Conservation within a Changing Ecosystem Context*, will provide approximately USD 75 000 in co-financing to assist in a global understanding of vulnerability and adaptation planning within fisheries and aquaculture and in sharing of lessons-learned during project implementation. The project has also funded the initial climate change vulnerability assessment for the Benguela fisheries and regional workshop, providing initial guidance on the project framework and priorities.
- An FAO Technical Cooperation Project (TCP) under development will support and promote climate change adaptation among value chain actors in selected artisanal fisheries communities in the Benguela countries. The focus will be on actors engaged in small-scale fishing, processing and marketing whose livelihood is hinged on activities carried out in the sector. The project will address climate change issues that threaten the artisanal fisheries sector in the targeted countries and thereby sustain and improve the livelihood of the targeted beneficiaries. 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 adaptation 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 and experience will be documented and disseminated widely for future replication and up-scaling. This project will provide co-financing of approximately USD 250 000.
- The FAO Angola aquaculture TCP project entitled *Technical support for spatial planning of aquaculture zones in the Republic Angola* (2014-2015) will support aquaculture development through (i) an inventory of existing aquaculture structures and their characteristics; (ii) the mapping of potential aquaculture zones discussed and implemented; (iii) training of National Directorate of Aquaculture staff on the Ecosystem Approach to

Aquaculture and spatial planning. The project will provide approximately USD 200 000 in co-financing.

- The FAO/Norway project *Climate Change, Fisheries and Aquaculture: testing a suite of methods for understanding vulnerability, improving adaptability and enabling mitigation* (2011-2015) will provide approximately USD 100 000 in co-financing to assist in community-level vulnerability assessments, including the development of guidance on Rapid Vulnerability Assessments for fisheries-dependent communities.
- The 2nd phase of the *NEPAD Agency – FAO joint fisheries programme* (NFFP), supported by funding from SIDA, includes three components of which one is “Component C: Vulnerability of fishers, fish farmers and their communities is reduced through development and implementation of community based Disaster Risk Management (DRM) and CC adaption plans, and strategies addressing climate change at the national and regional levels”. Based on inclusive stakeholder consultations, priority needs across the African continent identified under Component C include strengthening policy integration at regional and national levels and improved collaboration and coordination of DRM and CCA in fisheries and aquaculture, and identification and utilization of best practices on integration of DRM and CCA. The NFFP will support the project in the sharing of lessons-learned across the African continent and will contribute approximately USD 50 000 in co-financing.

4.3.5 Other co-financiers inputs

The BCC, as executing agency, will provide USD 3 000 000 in co-financing through office space, staff time, information/data provision.

GULLS co-financing of USD 100 000 will be in the form of vulnerability assessments in selected coastal communities and the small pelagics fishery and climate change awareness raising in South Africa.

Co-financing from Masifundise will be approximately USD 6 000 through its support to sustainable management of marine capture fisheries, through provision of information on small-scale fisheries and staff time during the project implementation phase.

The ECOFISH project will provide USD 100 000 in co-financing towards improving knowledge of basic ecosystem processes, improving the assessment of fish stocks and involving stakeholders in the management of Benguela fisheries.

4.4 Financial management and reporting on LDCF/SCCF resources

Financial management and reporting in relation to the GEF resources will be carried out in accordance with FAO’s rules and procedures and as described in the Execution Agreement between FAO and BCC. In accordance with the project budget, FAO shall provide cash advances in US dollars up to the total of USD 4 725 000.

BCC shall provide project execution services in accordance with its own regulations, rules and procedures adjusted to FAO rules and regulations and GEF minimum fiduciary standards as established in the Execution Agreement to ensure that the project funds are properly administered and expended. BCC shall maintain a project account for the funds received from FAO in accordance with accepted accounting standards.

Financial reporting

All financial reporting shall be in US dollars, and any exchange differences accounted for within the GEF-approved US dollar project budget. Within 15 days of the end of each six month, i.e. on or before 15 July and 15 January, BCC shall submit six-monthly statements of expenditure of GEF resources to the FAO Subregional Coordinator in Harare (Budget Holder). The purpose of the financial statement is to list the expenditures incurred on the project on a six monthly basis so as to monitor project progress and to reconcile outstanding advances during the six month period. The financial statement shall contain information that forms the basis of a periodic financial review and its timely submission will be a prerequisite to the continued disbursements of funds to BCC.

BCC shall prepare annual financial reports on the use of the GEF resources to be submitted with the 2nd six monthly Project Progress Report, showing amount budgeted for the year, amount expended since the beginning of the year, including un-liquidated obligations (commitments) as follows:

1. Details of project expenditures on an output-by-output basis, reported in line with project budget lines as set out in the project budget included in this Project Document appendix 3, as at 31 December each year.
2. A final statement of account in line with the project budget included in this Project Document appendix 3, reflecting actual final expenditures under the project, when all obligations have been liquidated.
3. An annual budget revision will be prepared for review and clearance by the FAO Budget Holder, the LTO, and the FAO GEF Coordination Unit. The budget revision, once approved, will be posted in the FPMIS by the FAO GEF Coordination Unit.

Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the Financial Procedures Agreement with the GEF Trustee and submitted by the FAO Finance Division (CSFE).

Disbursements of Funds

FAO shall transfer the amount of **USD 4 725 000** of GEF funds payable in instalments, as outlined below, to BCC to carry out the GEF financed project activities as described in this Project Document. The BCC shall prepare and submit to FAO, together with the Annual Work Plan, a detailed budget to facilitate the predictability of the needed funds for the year. The first instalment of USD 236 250 (5 percent of the approved GEF amount) shall be advanced to BCC within two weeks following signature of the Execution Agreement. In case of any fiduciary risks identified through the fiduciary assessment of BCC, the first instalment will be subject to submission by BCC to FAO of a progress report on all actions agreed in the mitigation plan of fiduciary risks.

The second and subsequent instalments shall be advanced to BCC within two weeks upon submission of a satisfactory financial statement of expenditures report, Project Progress Reports and an updated AWP/B including the budget for the following six months. The FAO Lead Technical Officer should certify that reporting requirements under the terms of the Execution Agreement have been met and that project progress reports for the activities completed have been submitted to and accepted by FAO as showing satisfactory management and use of GEF resources. Reports should be submitted to the FAO Budget Holder for clearance in consultation with the FAO LTU and the FAO GEF Coordination Unit. All reports should be posted on the FPMIS by the GEF Coordination Unit.

Responsibility for Cost Overruns

FAO will make available to BCC a financial contribution in the amount of USD 4 725 000 (four million seven hundred twenty-five thousand United States Dollars). The BCC shall utilize the GEF project funds in strict compliance with the project document. The BCC shall be authorized to make variations not exceeding 20 percent on any total output budget line or any cost category line of the project budget provided that the total allocated for the specific budgeted project component is not exceeded. Any variations exceeding 20 percent on any total output budget line or any cost category line that may be necessary for the proper and successful implementation of the project, shall be subject to prior consultations with and approval by FAO. In such a case, a revision to the FAO-GEF budget in the project document should be prepared by BCC and approved by the FAO Budget Holder and the FAO GEF Coordination Unit. Cost overruns shall be the sole responsibility of BCC.

Audit

BCC will ensure external audit, consistent with recognized international auditing standards, of its project accounts and records in relation to activities and expenditures related to the project. The audit reports will be provided to FAO and may be shared with the GEF Trustee if this is requested. BCC shall submit to FAO an annual externally audited financial statement of the GEF project account within three months following the completion of each annual accounting period during the project.

4.5 Procurement

BCC will procure equipment and services provided for in the detailed budget Appendix 3 of this Project Document and will be following regulations in compliance with generally accepted international standards for public sector procurement as detailed in the Execution Agreement. BCC will ensure that its procurement rules and procedures and their implementation are transparent, accountable and within budgetary constraints.

Before the commencement of procurement, BCC shall develop the project procurement plan (Appendix 5) to be reviewed at the project inception and cleared by the FAO Sub-regional Coordinator (Budget Holder). The procurement plan shall be updated by BCC every six months and submitted to and cleared by the Budget Holder with the six-monthly financial statement of expenditure report, Project Progress Report, and Cash Transfer Requests for the next instalment of funds. FAO supervision of contracting and procurement processes will be executed as follows:³⁴

- a. All individual consultants contracts for an amount > USD 20 000 will be subject to FAO participation in selection panel and prior clearance of contracting process, Terms of Reference (TORs) and Curriculum Vitae (CVs).
- b. All consultant firms/NGOs contracts will be subject to FAO prior clearance of contracting process, TOR and technical proposals.
- c. There will be no single procurement of goods (non-expendable procurement) for an amount > USD 100 000. All procurement of goods will be subject to FAO prior clearance of bidding process, material and offers (single procurement amount < USD 100 000 and > USD 50 000) or technical specifications and price quotation comparison (single procurement amount < USD 50 000).

³⁴ These procedures for supervision of contracting and procurement processes will be revised after the first project year where some of the prior clearances by FAO of contracts and procurements may not be required depending on the performance of BCC in managing contracting and procurement processes

- d. All documentation related to non-expendable procurement and procurement of non-consultancy services in relation to training and workshops events shall be submitted to FAO for post review together with the six-monthly Financial Statements of Expenditures reports.

4.6 Oversight, monitoring and evaluation and reporting

4.6.1 Oversight

Project oversight will be carried out by the Project Steering Committee and FAO. Oversight will ensure that: (i) the project is implemented within the planned activities applying established standards and guidelines; (ii) project outputs are produced in accordance with the project results framework; and (iii) project risks are continuously identified and monitored and appropriate mitigation strategies are applied. At any time during project execution, underperforming components may be required to undergo additional assessments, changes to improve performance or be halted until remedies have been identified and implemented.

FAO will provide oversight and monitor progress largely through financial reports, project progress reports and periodic supervision and backstopping missions. FAO Lead Technical Officer and the Lead Technical Unit will develop a project supervision plan, which will be communicated to the Project partners during the inception phase of the project.

4.6.2 Monitoring and evaluation

Monitoring and evaluation of progress in achieving project results and objectives will be done based on the targets and indicators established in the Project Results Framework (See Appendix 1). During the project inception period, an M&E expert will be hired to support the Project Implementation Unit (PIU) in establishing a detailed project Monitoring and Evaluation system. Monitoring and evaluation activities will follow FAO and GEF monitoring and evaluation policies and guidelines and will include both midterm and final evaluations identifying main lessons learned for future application. Supported by Component 4, the project monitoring and evaluation system will facilitate learning and mainstreaming of project outcomes and lessons learned in relation to climate change adaptation in fisheries. This project will ensure that this information is made widely available and readily accessible – either through publications or through developing and maintaining the project website. Making use of different communication technologies and information tools will maximize overall impact and benefits. Overall, the M&E and adaptation learning components have been budgeted at USD 568,600.

At the initiation of implementation of the Project, the Project Implementing Unit will set up the project monitoring and evaluation system strictly coordinated with subsystems in each of the national project partners. Participatory mechanisms and methodologies for systematic data collection and recording will be developed in support of outcome and output indicator monitoring and evaluation. During the inception workshop, M&E related tasks to be addressed include: (i) presentation and clarification (if needed) of the project's Results framework with all project stakeholders; (ii) review of the M&E indicators and their baseline; (iii) drafting the required clauses to include in consultants' contracts to ensure they complete their M&E reporting functions (if relevant); and (iv) clarification of the respective M&E tasks among the Project's different stakeholders. One of the main outputs of the workshop will be a detailed monitoring plan agreed to by all stakeholders based on the monitoring and evaluation plan summary presented in table 4.2 below.

Table 4.2 Monitoring and evaluation plan summary

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs
Inception Workshops	BCC/Project Implementation Unit (PIU) will organize supported by FAO (LTO and LTU)	Within two months of project start up	USD 81,600 One regional and three national level inception meetings at a total. Although the regional inception is the main event, it will be important for project partners and beneficiaries in each country to have “national level” inception meetings.
Project Steering Committee meetings	BCC/PIU	At least once annually	USD 125 000 – back-to-back with BCC board meetings
M&E system development	PIU	Within three months of project start up	USD 25 000 A short-term M&E specialist will support the PIU at the onset of the project.
Project Inception Report	Prepared by BCC/PIU, cleared by the PSC and FAO.	Immediately after workshops	
Audits	External auditors. Organized by BCC.	Annually	USD 15 000 Undertaken throughout project period at a cost of USD 3000 per year
Supervision visits	BCC/PIU, FAO LTO/LTU and FAO GEF Coordination Unit	Annual or as required	The visits of FAO will be paid by GEF agency fee.
Project Progress Reports	BCC/PIU, with inputs from the National Project Coordinator and other partners	Six-monthly	Approximately 10% of project staff and operational items are expensed through the M&E component.
Project Implementation Review report	FAO LTO supported by the LTU and PIU (Project Coordinator) and cleared and submitted by the FAO GEF Coordination Unit to the GEF Secretariat	Annual	Paid by GEF agency fee
Co-financing Reports	BCC/PIU and Project Coordinator	Annual	Part of PPPRs
Technical reports	BCC/PIU, technical experts (consultants)	As appropriate	-
Mid-term Evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the FAO GEF Coordination Unit and other partners	At mid-point of project implementation	USD 70 000 for external consultant. In addition the agency fee will pay for expenditures of FAO staff time and travel

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs
Final evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the FAO GEF Coordination Unit and other partners	At the end of project implementation	USD 70 000 for external consultant. In addition the agency fee will pay for expenditures of FAO staff time and travel
Terminal Report	BCC/PIU, cleared by FAO.	At least two months before the end date of the Execution Agreement	-
Total Budget			USD 568,600

The day-to-day monitoring of the Project implementation will be the responsibility of the PIU, driven by the preparation and implementation of an AWP/B followed up through six-monthly PPRs. The preparation of the AWP/B and six-monthly PPRs will represent the product of a unified planning process between main project partners. As tools for results-based-management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details on output targets to be achieved, and the PPRs will report on the implementation of actions and the achievement of output targets. An annual project progress review and planning meeting should be held with the participation of the Project Coordinator, all the national coordinators and other staff to finalize the AWP/B and PPRs. Subsequently the AWP/B and PPRs are submitted to the PSC for approval (AWP/B) and Review (PPRs) and to FAO for approval. The AWP/B will be developed in a manner consistent with the project's Results Framework to ensure adequate fulfilment and monitoring of project outputs and outcomes.

Following the approval of the Project, the project's first year AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with an annual reporting calendar. In subsequent years, the AWP/B will follow an annual preparation and reporting cycle as specified in section 4.5.3 below.

4.6.3 Indicators and information sources

To monitor project outputs and outcomes including contributions to adaptation benefits, specific indicators have been established in the Results Framework (see Appendix 1). The framework's indicators and means of verification will be applied to monitor both project performance and impact. Following FAO's monitoring procedures and progress reporting formats, data collected will be of sufficient detail to be able to track specific outputs and outcomes and flag project risks early on. Output target indicators will be monitored on a six-monthly basis and outcome target indicators will be monitored on an annual basis if possible or as part of the mid-term and final evaluations.

The project output and outcome indicators have been designed to monitor on-the-ground impacts and progress in building and consolidating capacities for assessing climate change vulnerabilities within the BCLME region and for the designing and implementing adaptation strategies.

Monitoring information sources will be evidence of outputs (reports, website, lists of participants in training activities, manuals etc.). Progress towards the achievement of outcomes will be tracked through on-site monitoring through field supervision visits, stakeholder surveys and project evaluations.

4.6.4 Reporting schedule

Specific reports that will be prepared under the M&E program are: (i) Project inception report; Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) annual Project Implementation Review (PIR); (v) Technical Reports; (vi) co-financing Reports; and (vii) Terminal Report. In addition, completion of the LDCF/SCCF Adaptation Monitoring and Assessment Tool (AMAT) against the baseline (completed during project preparation) will be required at midterm and final project evaluation.

Project Inception Report. After FAO approval of the project and signature of the Execution Agreement - an inception workshop will be held. Immediately after the workshop, the BCC will prepare a project inception report in consultation with the FAO LTO/LTU and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan based on the monitoring and evaluation plan summary presented in section 4.5.4 below. The draft inception report will be circulated to FAO and the Project Steering Committee for review and comments before its finalization, no later than three months after project start-up. The report should be cleared by the FAO Budget Holder and GEF Coordination Unit.

Annual Work Plan and Budget (AWP/B). BCC will submit to FAO a draft Annual Work Plan and Budget. The AWP/B should include detailed activities to be implemented by project outputs and divided into quarterly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The draft AWP/B is circulated to and reviewed by the FAO Project Task Force, BCC/PIU incorporates eventual comments and the final AWP/B is sent to the PSC for approval and to FAO for final no-objection and upload in FPMIS by the GEF Coordination Unit. The draft AWP/B for the first year should be prepared by BCC and submitted to FAO no later than one month before the inception meeting.

Project Progress Reports (PPR): BCC will prepare six-monthly PPRs and submit them to FAO for the reporting period 1 Jan - 30 June by 31 July; and for the reporting period 1 July to 31 December by 31 January. The 1st semester six months report should be accompanied by the updated AWP/B, for review and no-objection by FAO. The PPR are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework Appendix 1. The FAO LTO will review the progress reports and collect and consolidate eventual FAO comments from the LTU, the GEF Coordination Unit, and the Budget Holder Office and provide these comments to the BCC. When comments have been duly incorporated the LTO will give final approval and submit the final PPR to the GEF coordination Unit for final clearance and upload in FAO FPMIS.

Annual Project Implementation Review (PIR): The LTO supported by the LTU and with inputs from the BCC/PIU, will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the GEF Coordination Unit for review and approval no later than 31 July. The GEF Coordination will upload the final report on FAO FPMIS and submit it to the GEF

Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The GEF Coordination Unit will provide the updated format when the first PIR is due.

Technical Reports: Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by BCC to FAO who will share it with the LTO and LTU for review and clearance, prior to finalization and publication. Copies of the technical reports will be distributed to the PSC and other project partners as appropriate. The final reports will be posted on the FAO FPMIS by the LTO.

Co-financing Reports: BCC will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by the three national governments, GULLS, and the Masifundise and eventual other partners not foreseen in the Project Document. BCC will submit the report to FAO in a timely manner on or before 31 July covering the period July (the previous year) through June (current year).

LDCF/SCCF Adaptation Monitoring and Assessment Tool (AMAT): Following the GEF policies and procedures, the tracking tool for LDCF/SCCF focal area will be submitted at three moments: (i) with the project document at CEO endorsement; (ii) at the project's mid-term evaluation; and (iii) with the project's terminal evaluation or final completion report. This should be completed by the Project Coordinator with support from the FAO Lead Technical Officer at mid-term and final evaluation.

Terminal Report: Within two months before the end date of the Execution Agreement, BCC will submit to FAO a draft Terminal Report. The main purpose of the final report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. The terminal report is accordingly a concise account of the **main products, results, conclusions and recommendations** of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application to the countries' further development of fisheries climate change resilience in the context of its development priorities as well as in practical execution terms. This report will specifically include the findings of the final evaluation as described in section 4.7 below. A final project review meeting should be held to discuss the draft terminal report before it is finalized by the BCC/PIU and approved by FAO.

4.7 Provision for evaluations

An independent Mid-Term Evaluation (MTE) will be undertaken towards the end of the third project year to review progress and effectiveness of implementation in terms of achieving project objectives, outcomes and outputs. Findings and recommendations of this evaluation will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term if necessary. FAO will arrange for the MTE in consultation with BCC. The evaluation will, *inter alia*:

- (i) review the effectiveness, efficiency and timeliness of project implementation;
- (ii) analyze effectiveness of partnership arrangements;
- (iii) identify issues requiring decisions and remedial actions;
- (iv) propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and

- (v) highlight technical achievements and lessons learned derived from project design, implementation and management.

An independent Final Evaluation (FE) will be carried out three months prior to the terminal review meeting of the project partners. The FE would aim to identify the project impacts and sustainability of project results and the degree of achievement of long-term results. This Evaluation would also have the purpose of indicating future actions needed to expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to management authorities responsible for the management of fisheries and marine resources and environment to assure continuity of the processes initiated by the Project.

4.8 Communication and visibility

A communication strategy will be developed during the first year of project implementation. The strategy will identify the main target groups, messages and appropriate delivery mechanisms. GEF guidelines on communications and visibility will be incorporated into the strategy. A number of activities have already been identified. These include:

- (i) Development and dissemination of information tools and materials to inform stakeholders and improve awareness on climate change impacts and building resilience in coastal ecosystems and communities
- (ii) Using the existing multi-sectoral platform of the BCC, awareness will be raised in the different national sectors of the importance of coordinated, multi-sectoral approaches to addressing vulnerability and adaptation of coastal dwellers to climate change
- (iii) Information produced and lessons learned from the project, together with other relevant information will be used to produce information tools and activities most suitable for the different stakeholder groups in each country. The information will be presented and disseminated in forms that facilitate action rather than lead to paralysis. It will include collation of existing audio-visual products and development of new ones around gaps identified
- (iv) Workshops and other forums for exchange and discussion at national level will be held to inform target groups of the results and lessons learned from the project and to promote intra-community sharing, with a particular emphasis on multi-sectoral approaches to climate change adaptation and ensuring fisheries and mariculture are given due attention
- (v) A regular newsletter on news and developments will be produced, either as a stand-alone publication or as a supplement to the existing BCC newsletter
- (vi) Representatives of BCC will promote and disseminate key results and insights gained from the project at selected priority meetings of regional and transcontinental bodies addressing climate change and vulnerability in fisheries.

4.9 Coordination with ongoing and other planned activities

Using and extending the BCC/FAO networks where necessary, the project will reach out to and liaise with all key related initiatives to ensure partnerships and good coordination. Key initiatives that the proposed project will need to work with include:

- The NEPAD Agency – FAO joint fisheries programme (NFFP), supported by funding from SIDA, includes three components of which one is “Component C: Vulnerability of fishers, fish farmers and their communities is reduced through development and implementation of community based Disaster Risk Management (DRM) and CC adaption plans, and strategies addressing climate change at the national and regional levels”. Priority needs across the African continent identified under NFFP Component C include strengthening policy integration at regional and national levels and improved collaboration and coordination of DRM and CCA in fisheries and aquaculture, and identification and utilization of best practices on integration of DRM and CCA. The two projects will be complementary in many respects. In particular this BCC project will be able to extend the largely educative role of NFFP to include pilots of practical applications in the Benguela countries.
- Conservation NGOs. WWF is working actively towards sustainable fisheries in the Benguela region and works with the BCC in promotion of EAF in the region. The two organizations have worked together on establishing baselines for tracking EAF in Angola, Namibia and South Africa and in reinforcing attention to the human dimension of EAF³⁵. These activities are directly related to the work programme of this project and WWF will be an important partner. Other conservation NGOs that should play at least some role in the project include the Namibia Nature Foundation (NNF) and BirdLife South Africa.
- Other NGOs and Civil Society Organizations. Some NGOs working with fishing communities were closely involved in the development of the project. In particular, Masifundise Development Trust and the Environmental Monitoring Group (EMG), both based in South Africa, have been active partners throughout. Project activities involving small-scale communities in South Africa will benefit from their experience and their credibility with the communities. There may be equivalent NGOs in Angola that will assist in the small-scale community work there but these have yet to be identified.
- Relevant Departments at local universities will be important sources of expertise and repositories of relevant knowledge. Their academic staff includes regional and international experts in fisheries biology and oceanography, the human dimensions of fisheries, fisheries governance, and climate change impacts on coastal communities and marine systems. The institutions that have been involved in the development of the project and are expected to be involved in its implementation include Agostinho Neto University, Angola, University of Namibia (UNAM) and Rhodes University, the University of Cape Town and the University of the Western Cape in South Africa.
- UNDP-GEF project “Realizing the inclusive and sustainable development in the Benguela Current Large Marine Ecosystem (BCLME) region through the improved ocean governance and the integrated management of ocean use and marine resources” currently under preparation. BCC will ensure close coordination between the proposed project and the UNDP-GEF project.
- The German Government (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) through the GIZ has granted Euro 6 million to the BCC under its International Climate Initiative 2013. The project aims to build capacity of BCC and its member states for transboundary management including through the identification and management of Ecologically or Biologically Significant Marine Areas (EBSAs), the establishment of an ecoregion-wide Marine Spatial Planning (MSP) framework, as well as developing concepts and instruments for the conservation and sustainable use of marine biodiversity in the ecoregion. Linkages to building climate change adaptive capacities can be made.

³⁵ <http://www.benguelacc.org/index.php/en/partners>

- The Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Strategic Action Plan (SAP) Implementation Phase project, which is currently under development, and its predecessor project “Agulhas and Somali Current Large Marine Ecosystems Project” will be coordinated with to share methodologies in understanding environmental change and impacts on LME dependent communities as dynamic connections in surface and deep ocean circulation exist between the two systems. The ASCLME SAP has identified environmental variability and extreme events as one of the four major areas of concern and the specific areas of concern share several areas with those identified in the BCLME LDCF/SCCF project: climate hazards and extreme weather events; sea level change; ocean acidification; changes in seawater temperatures; changes to hydrodynamics and ocean circulation; changes in productivity (shifts in primary and secondary production); geohazards (tsunamis, volcanic eruptions, earthquakes). The current project will share advances in knowledge, such as understanding community and sector-specific vulnerabilities as well as experiences in developing and implementing fisheries and aquaculture adaptation actions.

SECTION 5 – SUSTAINABILITY OF RESULTS

5.1 Social sustainability

The social and economic benefits from the project will be made more secure through increased awareness, strengthened adaptive capacity, early warning systems and improved intra- and inter-agency collaboration and communication at local, national and local levels. These will be aimed at contributing to early active and pro-active responses to reduce the risks to peoples' lives and livelihoods. In order to achieve this, the project will take into account the very diverse socio-economic situations of the different interest groups across the three BCLME countries, from artisanal and subsistence fishing communities to the employees of high-value commercial fisheries. The differences between genders in risks to and the benefits obtained from fisheries will also need to be taken into account. The project will therefore include in-depth analysis of the situations of both genders, providing a solid basis for developing actions to address the potentially different needs of men and women under the project.

The project aims to stabilize and enhance social and economic benefits, particularly through the piloting of improved climate-resilient fisheries practices amongst communities and in national and regional fisheries, addressed mainly in Component 2. Ensuring social sustainability of the progress made with pilot communities will be done through engaging all the key stakeholders throughout the assessment and planning processes. These will include the communities themselves, the national authorities responsible for fisheries management and development, local and provincial government (depending on the political systems prevailing in each pilot case), and other relevant stakeholders. This engagement should ensure that the adaptation action plans enjoy wide support, take full cognisance of the existing social and political context, including formal and informal rules and regulations, and are fully integrated with the context and the processes of which they will form a part. They should therefore be well entrenched and not overly dependent for sustainability on the momentum and resources of the project or on a small number of champions.

In the case of the national and regional fisheries, social sustainability will be relatively straightforward to secure. Management of the medium and large-scale fisheries in the BCLME is well-entrenched and tends to follow structured and relatively formal processes that include formulation of scientific advice based on best available information, consultation with stakeholders, and final decisions by the political heads, followed by implementation in practice. The project will make use of these structures and processes in promoting the consideration of the impacts of climate variability and change and strengthening resilience to those impacts in fisheries management. The pilot fisheries that will be addressed in the project will be those most vulnerable to climate impacts. This will increase awareness of the vulnerability of these fisheries amongst scientists, managers and stakeholders. This should lead to inclusion of climate change and adaptation considerations in the management process, which will then become an accepted and standard component of annual and longer-term management planning and decision-making, alongside other routine functions such as monitoring stock abundance, consideration of bycatch and other ecosystem considerations, and social and economic implications.

Outcome 2.3 aims to strengthen institutions and frameworks to provide early warning of extreme weather events and other climate-related risks in support of contingency planning. This will include providing navigational and safety equipment to selected artisanal fishers in Angola and the training required to be able to use it effectively. The Outcome will therefore have important social benefits in the form of increased safety at sea and increased ability and speed by stakeholders to respond to other threats to their livelihoods. Meteorological and related services are generally provided as a government service and it is anticipated that the institutions and frameworks to be strengthened under this Outcome will largely be governmental and quasi-governmental. Nevertheless, if the improvements are to be sustained by the governments, it will be essential that they are both cost-effective and clearly providing important and demonstrable benefits to stakeholders that justify the

additional costs. This will require demonstrating that the stakeholders have whatever equipment is required to benefit from the information, be it simply radios to listen to public broadcasts or more sophisticated and costly equipment such as vessel monitoring systems (VMSs), and that they are using it effectively. Stakeholder surveys will be used to monitor this usage and stakeholders will also be encouraged to engage directly with the service providers to ensure sustained provision of the desired services.

5.2 Environmental sustainability

The BCC itself and its three member countries are all committed to the FAO Code of Conduct for Responsible Fisheries and implementation of an ecosystem approach to fisheries³⁶. The Benguela Current Convention “is a formal treaty between the governments of Angola, Namibia and South Africa that sets out the countries' intention to promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits.”³⁷ In keeping with these commitments and goals, all activities within the project that are related to or have impacts on the environment will be undertaken within the framework of an ecosystem approach and driven by an imperative of environmental sustainability.

Environmental vulnerability, in particular that of the Benguela Current ecosystem and its components but also the coastal and terrestrial environment whenever relevant, will be a core consideration in the vulnerability assessments and planning undertaken within Component 1. The assessments will include identification of climate change impacts on the ecosystem and their vulnerability to those impacts, while the adaptation actions identified will include actions necessary to ensure environmental resilience. As a further safeguard to ensure sustainable ecosystems and environments, the awareness creation and capacity building undertaken under Components 1 and 3 will stress the need to maintain and strengthen where necessary the resilience of the environment to climate change and variability and other important threats.

Under Component 2, the need to ensure environmental sustainability will be put into practice in the piloting activities, where the same underlying framework of an ecosystem approach, that includes adherence to the FAO Code of Conduct, will be the basis of all interventions. The principles and practice are already well entrenched in policies and implementation in the three countries, albeit with some areas that need improvement in all cases, and the project will provide an impetus and opportunity to reinforce policies and to boost their implementation at community, national and regional levels.

³⁶ Cochrane, K.L., C. J. Augustyn, T. Fairweather, D. Japp, K. Kilongo, J. Iitembu, N. Moroff, J. P. Roux, L. Shannon, B. Van Zyl and F. Vaz Velho. 2009. Benguela Current Large Marine Ecosystem—Governance and Management for an Ecosystem Approach to Fisheries in the Region. *Coastal Management* 37, pp 235 – 254

³⁷ <http://www.benguelacc.org/index.php/en/about/the-benguela-current-convention>. Accessed 11/03/2014.

5.3 Financial and economic sustainability

Marine fisheries make important social and economic contributions in all three countries. For example, there are an estimated 102 fishing communities along Angolan's 1 650 kilometre coastline, made up of artisanal fishers and others involved with associated activities on land. The total number of people involved in artisanal fishing activities is estimated at 130 000 to 140 000. Fisheries in Angola contribute approximately 7.8% of the Angolan GDP. In Namibia, approximately 100 000 people, 6.5% of the country's population, live on the coast. Many of them are directly or indirectly dependent on living marine resources for their livelihoods, with about 14 000 people employed in the formal marine fishing industry. In South Africa, the fishery sector employs approximately 26 000 people, mostly in the commercial fisheries but there are approximately 34 communities engaged in subsistence or informal fishing in South Africa's BCLME zone. In all three countries, women play an important role in the fisheries sector, mainly in post-harvest activities.

The fisheries sector, and the growing mariculture sector, are important generators of economic benefits in the region. Economic sustainability, and growth wherever possible, is a goal and a requirement in all of the countries. There is very limited scope for subsidies or for welfare support in any of the countries and fisheries and fishing communities have to be largely economically self-reliant. The key outcomes from the project should be in the form of improved practices and processes for enhancing climate change resilience in the Benguela Current fisheries system. These processes and practices will take place mainly in and by existing structures and institutions and therefore should not involve substantial increases in budgets, although they will require some realignment and prioritization of the use of existing financial and human resources. Such realignments will be required amongst all stakeholders and at all geo-political levels, from community through to regional. It is anticipated that the greater awareness and understanding of the importance of including consideration of climate change and variability impacts and the need for adaptation to those impacts, including the demonstrations through the pilots, will ensure that the realignments and any additional costs that may be required are sustained after the project.

One area that is likely to incur additional costs, primarily through the additional time required from human resources, will be the activities and processes required to achieve the integration of fisheries climate change considerations into broader inter-sectoral development and climate change policies and programmes (Component 1). Depending upon the existing opportunities for multi-sectoral discussions, this could require either the creation of new platforms for inter-sectoral planning and action, with financial implications for all sectors, or the participation of fisheries and mariculture in existing platforms in which the sectors are not currently involved. The latter option would have time, and therefore cost, implications mainly for the fisheries and mariculture sectors. Again, awareness creation and clear demonstrations of the need for and value of integrated approaches will be the primary tools for ensuring economic sustainability in this area. The Benguela Current Commission and Convention, in which the countries have already recognized the need for multi-sectoral, coordinated approaches to sustainable use will be an important platform and catalyst for ensuring economic sustainability of the same approach at national level after the project is completed.

The project is giving considerable attention to the mariculture sector, both as a sector that is vulnerable to climate change but also as a potential alternative livelihood, and adaptation, for communities and individuals engaged in fisheries but vulnerable to climate change impacts on their existing livelihoods. In order for initiatives under this project to promote mariculture to be sustainable, it will be essential that those mariculture ventures can rapidly become economically viable and self-sustainable, rather than relying on government or donor support and subsidy. The project will therefore be considering economic viability as a key criteria in assessing opportunities for development of the sector and as a pre-requisite for further intervention.

5.4 Sustainability of capacities developed

The lead government agencies in the three countries are experiencing capacity problems at present and there is a need to both build and, especially in Namibia and South Africa, to retain capacity.³⁸ There are also serious capacity constraints amongst the stakeholders, particularly the small-scale and artisanal fishers and fishing communities of Angola and South Africa. Incorporation of climate change considerations and adaptation planning and action, while essential, will put further strains on the existing capacity. The project will recognize this challenge and ensure that capacity development is targeted at where it is most required, will be most cost-effective and is most likely to be directly applied and sustained. The information required to apply these criteria will be obtained through the vulnerability assessments in Component 1, in which stakeholder participation and consultation will be an integral part, as well as the consultations that will take place in Component 2 and 3. Government officials and institutions will be a part of these consultations and, through participation in activities in Components 1 and 2, as well as targeted capacity-building under Output 3.2.2., will be both contributors to and beneficiaries of capacity development.

Sustainability will be ensured by rooting the capacity development in the existing institutions engaged in fisheries and mariculture in different ways in the BCLME, at all geo-political scales, including INIP, IPA, MFMR, DAFF, DEA, local and provincial government as well as communities, CSOs, NGOs and the private sector. The co-financing provided by these institutions can be expected to continue after the project and will be key in sustaining the capacity that has been developed and in continuing further development. Greater awareness of the need for and demonstration of the benefits of enhancing climate change resilience in the Benguela Current fisheries will also provide incentives to maintain and apply the capacity developed, as well as to extend it to address other communities and fisheries across the region.

5.5 Appropriateness of technology introduced

The project will not be making extensive use of new technologies, with the exception of Output 2.3.1. Under that Output there may be requirements for new technologies to monitor some indicators of climate-induced risks in fisheries and mariculture such as extreme warm water, low oxygen events or harmful algal blooms. In these cases the available methods and technologies are well-understood by experts in the national government agencies and in the BCC. The current constraints do not lie in the technologies (apart from their costs in some cases) but rather in the human and institutional capacity to undertake regular monitoring, processing and dissemination of the information. If the project does provide technology to facilitate advance warning of new indicators, there is sufficient, high-level expertise in the region to ensure that the most appropriate and cost-effective technology is used.

In addition, also under Output 2.3.1, fishers in selected communities in Angola will be provided with modern navigational and safety equipment to improve their safety-at-sea and ability to respond timeously to advance warnings and extreme events. This technology will need to be robust, user-friendly and affordable. It will be essential to have a good understanding of the broad environment and contexts in which it will be used in order to select the best technology for the targeted users. The project will ensure that this is done, using appropriate social experts and facilitators in combination

³⁸ Cochrane, K.L., C. J. Augustyn, T. Fairweather, D. Japp, K. Kilongo, J. Iitembu, N. Moroff, J. P. Roux, L. Shannon, B. Van Zyl and F. Vaz Velho. 2009. Benguela Current Large Marine Ecosystem—Governance and Management for an Ecosystem Approach to Fisheries in the Region. *Coastal Management* 37, pp 235 – 254

with high quality technical advice on the capabilities and suitability of the different options. All of this expertise is available within the region.

Where necessary, technological improvements relating to post-harvest processes and aquaculture systems under Output 2.3.1 will be introduced based on local contexts, resources and skills.

5.6 Replicability and scaling up

The project will be focusing on two scales: local small-scale and artisanal fisheries on the one hand and national and regional medium and large-scale fisheries at the other. The need for replicability and scaling up will be most significant with the small-scale and artisanal fisheries. In Angola there are over 102 communities and in South Africa over 30, but the project will only have the resources to undertake piloting in two communities in each country. Namibia does not have significant fishing communities and has opted to focus on national, commercial fisheries in the project. In order to have the impact that is required, the project will be aiming at ensuring replicability and scaling up throughout. The initial vulnerability assessments and prioritisation of adaptation actions undertaken in Component 1 will encompass a much larger number of communities than the pilot studies. The number to be included has not yet been decided in those two countries but is likely to encompass between 25 and 50% of the total and the assessments will be designed in a way that will ensure that they are representative of the country as a whole. The information gained through these activities will identify similarities and differences in the communities, which will be important information for future efforts at up-scaling and replicating.

While they differ considerably between the two countries, the artisanal and small-scale fisheries in Angola typically have a number of common features, as do those along the BCLME coast of South Africa. An underlying similarity is that the stocks they exploit are generally widely distributed and shared with other communities and with larger-scale commercial fisheries in each country. In addition, in each of these cases there are common cultural, political and historical backgrounds. Each community will have its own, unique characteristics and contexts but there will be enough in common between the pilots and many of the others to ensure that the experiences and lessons learned from the piloting of community-based adaptation action plans will be readily replicable in many other instances in the two countries and the project will support direct community to community learning. In addition, the government officials, CSOs, NGOs and other supporters of the pilots will gain considerable experience and expertise from participation in them that they will be able to apply in other cases and extend to other staff in their organizations. Similarly, the support in the use of modern navigational and safety equipment provided to selected communities in Angola will be able to be readily replicated in many other communities.

In the cases of the national and regional fisheries, the piloting will be undertaken on four fisheries (one each in Angola and South Africa and two in Namibia, taking account of bilateral and regional linkages where appropriate) and the mariculture sectors. The Angolan and South African examples have been and the Namibian pilots will be selected on the basis of being the most vulnerable to climate change and variability as indicated by preliminary vulnerability assessments undertaken during project preparation and consultation with stakeholders. The need to address climate change impacts and adaptation is less urgent in the other fisheries in the region but will nevertheless need to be addressed in the medium-term at least. There are considerable biological, social and economic differences between the national and regional fisheries in the BCLME which will mean that solutions from the pilots will not necessarily be directly applicable to others. However, the processes that have been applied in the pilots, the experience gained and the capacity that has been developed, particularly in scientists and managers in the government agencies, will be of considerable value in replicating the development or strengthening of national and regional management plans to incorporate monitoring and adaptive response to climate variability and change.

Finally, due to the specificity of the Benguela context, the lessons learned and best practices developed in this project are unlikely to be directly transferable to other African regions but they will undoubtedly include important common principles, processes and practices that will assist countries and regional bodies to build resilience and reduce vulnerability in their marine fisheries systems. Component 3 will include activities aimed at extracting those principles, processes and practices and ensuring that they are brought to the attention of authorities and stakeholders in other regions.

APPENDICES

APPENDIX 1: RESULTS MATRIX

Project outcomes and impacts:

Objective/Impact	Indicator	Baseline	Targets	Assumptions
<p><u>Project Objective:</u> To build resilience of the Benguela Current marine fisheries systems to climate change through implementation of adaptation strategies in order to ensure food and livelihood security.</p>	a) climate change adaptation actions in fisheries and fishery dependent communities incorporated into key policies and planning in the 3 project countries;	0	a) at least one key policy or addenda to existing policies (at least one in each country), submitted to National Authorities and BCC for adoption by project end.	<ul style="list-style-type: none"> - High level political support from all government departments with primary responsibilities for fisheries, mariculture and climate change adaptation and mitigation in the three countries; - Willingness of all stakeholders to participate in the project and contribute to project activities.
	b) # of small-scale fishery communities with adaptation plans under implementation.	0	b) at least 9 communities have community-based adaptation plans under implementation by PY3.	
	c) climate monitoring and early warning systems providing timely and relevant information to target fishery communities.	There are various programmes in place for monitoring important climate-driven extreme events and other risks, but the processing and dissemination of much of this information is not tailored to the sector's and fishery communities' needs.	c) climate monitoring and early warning systems providing timely and relevant information to target fisheries communities by PY4 ...	
	d) national or regional fisheries management plans incorporate monitoring and adaptive response to climate variability and change.	Existing management plans do not take into account climate variability and change.	d) at least 3 national or regional fisheries management plans developed/revised to incorporate response to climate variability and change by PY4.	

Project outputs and outcomes:

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
Component 1: Integrating fisheries climate change considerations into fisheries policies and planning as well as into broader inter-sectoral development and climate change policies and programmes.									
Outcome 1.1 Regional and national authorities, as well as major stakeholder groups, informed of vulnerabilities across the region to predicted impacts of climate variability and change	Indicator 1.1 Information about the vulnerability and adaptation options available to key stakeholders (BCC, national fisheries authorities, senior management in government, the commercial sector and NGOs, as well as community leaders)	Very little suitable and regionally relevant information on climate change impacts and adaptation currently available.		Information generated through participatory assessments communicated to key stakeholders through a regional network and other mechanisms (developed under component 3)				Interviews with selected regional and national target groups/institutions and members of the regional network. Mid-term Evaluation	BCC, National Executing Partners in the 3 countries (INIP, MFMR, DAFF)
Output 1.1.1 Participatory and integrated vulnerability assessments of fisheries and fishery-dependent communities undertaken in all three countries and results disseminated.	Indicator 1.1.1 Standardized vulnerability assessments of 9 communities (7 in Angola and 2 in South Africa), 4 fisheries (across all countries) and mariculture	VAs have been undertaken in the region but are sporadic and not standardized.	Vulnerability assessments completed and reports disseminated to government authorities and stakeholders. Regional network of stakeholders established and being	Regular exchange of key information taking place throughout project implementation.				Reports completed and verified by experts and stakeholders falling within VAs.	BCC, INIP/IPA (Angola), MFMR (Namibia), DAFF/DEA (South Africa)

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
	sectors in each country.		used to disseminate information on climate change impacts and vulnerabilities to key stakeholders.						
Output 1.1.2 Potential adaptation actions for the most vulnerable fisheries and fishery-dependent communities identified	<u>Indicator 1.1.2</u> Agreed list of adaptation options.	There are some examples of reactive adaptation to significant impacts but no widespread, proactive planning for adaptation is taking place		Identification of adaptation actions completed and validated as part of the development of community adaptation plans under component 2.				Technical reports; and project monitoring reports.	BCC, INIP/IPA (Angola), MFMR (Namibia), DAFF/DEA (South Africa)
Output 1.1.3 Vulnerability assessments incorporated into the BCC and national planning/management programmes.	<u>Indicator 1.1.2</u> Regular (3-5 years) vulnerability assessments part of management planning guidelines/procedures of BCC and national fisheries authorities.	0 Vulnerability assessments and information not part of BCC and national planning processes.		BCC regional working group on vulnerability assessments and planning established to guide BCC and national authorities.	Requirements to incorporate vulnerability assessments and climate risk information reflected in the planning and management guidelines/procedures.			Relevant documents, project progress reports; evaluation reports.	INIP/IPA/INA MET (Angola); MFMR, MET (Namibia); DAFF/DEA/SA WB (South Africa)
Outcome 1.2 Climate change adaptation in fisheries and fishery-dependent communities	<u>Indicator 1.2 #</u> of key national plans/policies	0			Draft proposals for revision of existing policies completed.		At least one key policy in each project country adopted or	Policy documents, project reports.	

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
mainstreamed into broader sectoral, food-security and climate change frameworks in all of the three countries	that have incorporated climate change adaptation actions						under consideration by national authorities.		
Output 1.2.1 Draft policies/ addenda to existing policies submitted for adoption.	<u>Indicator 1.2.1</u> Draft policies, or addenda to existing policies to mainstream fisheries and climate change considerations submitted to National Authorities and BCC for adoption.	0			Draft policy proposals prepared with participation by relevant authorities at national and regional level and submitted to appropriate officials and institutions.			Policy documents, project reports.	BCC, INIP, MFMR, DAFF.
Output 1.2.2 Regional and national inter-agency/inter-sectoral mechanisms strengthened to ensure fisheries and mariculture sectors are well-placed within national, provincial and local frameworks.	<u>Indicator 1.2.2</u> # of intersectoral regional/national events with fisheries and mariculture part of the agenda and recommendations.	At present the fisheries and mariculture sectors tend to be over-looked or under-estimated in coastal development and climate change plans.				Fisheries and mariculture included in agenda and recommendations in at least one regional meeting or workshop and one in each of the countries.		Reports of relevant inter-agency/inter-sectoral meetings.	BCC with support from INIP/IPA (Angola); MFMR, MET,NPC, MME, MWT, NACOMA, Erongo Traditional Authority Trust (Namibia); DAFF/DEA

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
									(South Africa).

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
Component 2: Piloting improved climate-resilient fisheries practices.									
Outcome 2.1 Vulnerability to climate change and variability reduced in local, small-scale fisheries and fishing communities identified as being at high risk, considering all stages from production through to post-harvest and trade	Indicator 2.1.a) # of vulnerable small scale fisheries and fishing communities with adaptation action plans under implementation.	0			At least 9 high-risk local fisheries or communities (7 in Angola, and 2 in South Africa) with approved adaptation action plans being implemented.			Technical reports, field monitoring missions, project progress reports.	BCC, national agencies.
	Indicator 2.1 b) # of households (disaggregated by gender) directly benefitting from implementation of the plans.	Baseline and targets to be determined after selection of pilot sites.				Target to be determined.	Target to be determined.	Survey to assess number/% of households and communities that have benefitted, disaggregated by gender. Progress reports, evaluation report.	BCC and national agencies.
Output 2.1.1	Indicator 2.1.1	0		By the end of year 2,	By the middle of			Completed	1) IPA, DNP,

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
Community-based adaptation action plans developed and piloted in high-risk fisheries and communities	Adaptation action plans in place and implementation commenced by the end of year 3 in at least 9 high-risk local fisheries or communities (7 in Angola and 2 in South Africa).			inception workshops will have been held with the selected communities, and further extensive consultations will have been held. Consultants will have consolidated information available and a first draft of the adaptation action plans will have been developed.	year 3, adaptation action plans will have been completed and endorsed by communities and authorities. Under implementation by end of year 3..			plans, progress reports.	Ministério de Agricultura (Angola); MFMR (Namibia); DAFF + relevant local or provincial government (South Africa).
Outcome 2.2 National and regional institutions are prepared and have the capacities to integrate climate change adaptation (CCA) in fisheries in practice, based on thorough consultative planning processes	Indicator 2.2 # of management plans that have been developed, or revised, to incorporate monitoring and adaptive responses to climate variability and change in national/regional fisheries					At least 3 management plans are being implemented.		Management plans, project progress reports	
Output 2.2.1 Management plans in selected national fisheries and mariculture sectors in each country that include appropriate consideration of monitoring and adaptive	Indicator 2.2.1 formal management plans for selected fisheries that include adaptation to climate variability	0		By the end of the second quarter of year 2, potential changes (and associated costs and benefits) required to current management plans in order to address climate change and	Climate variability and change considerations included in management plans (or in the process of	Consideration of climate variability and change, and adaptive responses to those impacts, being routinely		Management plans, progress reports.	INIP/IPA (Angola); MFMR, NACOMA (Namibia); DAFF/DEA (South Africa).

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
responses to climate variability and change.	and change..			variability identified.	inclusion) by the end of year 3,	applied in management plans			
Outcome 2.3 Strengthened institutions and frameworks for effective monitoring and early warning to facilitate contingency planning at the regional and national levels	<u>Indicator 2.3</u> Climate monitoring and early warning systems providing timely and relevant information to target fishery communities and other key stakeholders	Meteorological services in place in the region that provide early warning of extreme weather events. However, the processing and dissemination of much of this information is not tailored to the sector's and fishery communities' needs.				Climate monitoring and early warning systems modified and have started to provide timely and relevant information in all 3 countries.		Evidence of information products being disseminated to stakeholders. Progress reports. Evaluation reports	
Output 2.3.1 National and regional frameworks for monitoring and disseminating information on extreme weather events and climate-induced risks in fisheries modified to address gaps in current coverage.	<u>Indicator 2.3.1</u> Relevant key parameters being monitored and advance warnings of extreme or threatening events made available to stakeholders in the three countries.	There are generally good meteorological services in place in the region that provide early warning of extreme weather events. Services for monitoring other risks such as low oxygen events and harmful algal blooms, are considerably less			A review and gap analysis of existing services and needs in advance warning of key indicators – in all 3 countries..	Key gaps being addressed and at least 4 currently unavailable indices available to stakeholders.		Evidence of information being made available, progress reports.	INIP/IPA/ INAMET (Angola); MFMR, MET (Namibia); DAFF/DEA/SA WB (South Africa).

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
		developed and requires considerable strengthening.							

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
Component 3: Capacity building and promotion of improved climate-resilient fisheries practices									
<u>Outcome 3.1</u> Increased awareness and capacity of stakeholders to enable and promote a proactive, forward-looking approach to climate change	<u>Indicator 3.1</u> Extent of awareness and understanding of likely impacts of climate change and variability on the fishery sector by stakeholders and other affected individuals.	Limited understanding and the capacity amongst all the stakeholders to prepare for and respond to CC impacts.	Baseline established.		More than 25% of target stakeholders with moderate understanding and awareness.		At least 50% of target stakeholders with moderate to high understanding and awareness.	Stakeholder surveys	BCC, national agencies.
<u>Output 3.1.1</u> Targeted, user-friendly information on impacts, risks and vulnerability to climate change and variability and adaptive responses produced and disseminated to national and regional	<u>Indicator 3.1.1</u> # of information products released and other activities (e.g. workshops, plays, visits, films) per year from year 3 to year 5.	Limited information available.		BCC, in close liaison with national authorities, has created a network of contacts with media associations and disseminates project results and events through the network in suitable formats.	At least two information products released or dissemination activities undertaken per country and at least one at regional level.	At least two information products released dissemination activities undertaken per country and at least one at	At least two information products released dissemination activities undertaken per country and at least	Evidence of information products disseminated, progress reports.	BCC with support from INIP/IPA (Angola); MFMR (Namibia); DAFF/DEA (South Africa).

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
stakeholders, and to local communities in the most highly vulnerable areas.						regional level.	one at regional level.		
Outcome 3.2 Knowledge and understanding of stakeholders strengthened through targeted training on climate change risks and best adaptation practices in fisheries.	<u>Indicator 3.2</u> Capacity perception index as determined from surveys at the end of each training event.	Limited capacity at all levels.			Improvement in capacity perception index.		Improvement in capacity perception index.	Surveys of stakeholders involved in targeted training to determine capacity perception index score (disaggregated by gender) in each case	
Output 3.2.1 Training on climate change risks and adaptation conducted in selected communities.	<u>Indicator 3.2.1a</u> # of stakeholders in selected communities that have received training.	0.		Training plans + modules developed.	At least 100 stakeholders will have received training.	At least another 100 stakeholders will have received training by the end of the third quarter.	At least another 100 stakeholders will have received training by the end of the third quarter.	Training reports, project progress reports.	BCC with support from INIP/IPA (Angola); MFMR (Namibia); DAFF/DEA (South Africa).
	<u>Indicator 3.2.1b</u> # of people including artisanal fishers, mariculturists and others involved in an	0			First group of 20 people will have been sent on an exchange programme.	Second group of 20 people will have been sent on an exchange programme.	Third group of 20 people will have been sent on an exchange programme.	Information from BCC and countries on number of	BCC with support from INIP/IPA (Angola); MFMR (Namibia); DAFF/DEA

Outcome/output	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
	exchange programme.							people involved; progress reports.	(South Africa).
Output 3.2.2 Training on climate change risks and adaptation conducted for stakeholders from government, universities, non-governmental organizations and industry.	Indicator 3.2.2 # of stakeholders that have received training.	Beyond a small number of scientists and academics working on climate change risks, and an even smaller number working on adaptation, there is little awareness of or capacity to assess climate change impacts and vulnerabilities of fishery systems in the region.		Training programme development completed.	At least 50 stakeholders will have received training.	At least another 50 stakeholders will have received training by the end of the year.	At least another 50 stakeholders will have received training by the end of the third quarter.	Training reports, project progress reports.	BCC with support from INIP/IPA (Angola); MFMR (Namibia); DAFF/DEA (South Africa).

	Indicator	Baseline	Milestones towards achieving output and outcome targets					Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Year 5	Means of verification	Responsible for Data Collection
Component 4: Monitoring and Evaluation and adaptation learning									
Outcome 4.1 Project implemented and monitored effectively and efficiently and best practices and lessons learned disseminated.	<u>Indicator 4.1a</u> Level of progress in achieving results.				30-40% progress in achieving project outcome targets.		Project outcomes achieved and showing sustainability	Mid-term and final evaluations	PIU,BCC, FAO
	<u>Indicator 4.1b</u> M&E activities conducted according to the plan	0	M&E plan reviewed and refined as necessary.		100% implementation of the plan .		100% implementation of the plan.	Mid-term and final evaluations. PIR reports.	BCC, FAO
	<u>Indicator 4.1c</u> # of organizations that have received targeted products on best practices	0			At least 4 African and other institutions will have received targeted information products.			Progress reports. Survey on the usefulness of products.	BCC, FAO
Output 4.1.1 Project monitoring system established.	<u>Indicator 4.1.1.</u> Monitoring system operational and providing required information.	0	Monitoring system operationalized and providing required information throughout year 1 to year 5					Monitoring reports.	PIU
Output 4.1.2 Midterm and final evaluations conducted	<u>Indicator 4.1.2</u> Mid-term and final evaluation reports.	0			Mid-term Evaluation report		Final evaluation report	Evaluation reports	FAO
Output 4.1.3 Project-related “best-practices” and “lessons-learned” assessed, published and disseminated	<u>Indicator 4.1.3a</u> Targeted products produced and disseminated	0	Format for systematically capturing lessons learnt developed.		Best practices id’ed & information produced and disseminated.		Publication on “best practices” and Lessons learned disseminated.	Publication Progress reports.	BCC
	<u>Indicator 4.1.3b.</u> Operational, regularly updated project website	0	Website(or section of BCC website) fully operational.					Website.	BCC

APPENDIX 2: WORK PLAN

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1: Integrating fisheries climate change considerations into fisheries policies and planning as well as into broader inter-sectoral development and climate change policies and programmes.																						
Output 1.1.1 Participatory and integrated vulnerability assessments of fisheries and fishery-dependent communities undertaken for all three countries and results disseminated.	Activity 1.1.1.1 Develop a locally-standardized Vulnerability Assessment (VA) methodology or methodologies, based on the IPCC framework, for application in the selected priority communities and fisheries in the region.	BCC together with INIP/IPA (Angola); MFMR (Namibia); DAFF (South Africa)	X	X																		
	Activity 1.1.1.2. Development and dissemination of information tools and material, updating them as new, local information becomes available, to inform key stakeholders and improve awareness across the region on climate change impacts and building resilience in coastal ecosystems and communities.	BCC supported by INIP/IPA (Angola); MFMR,MET, MME, MWT, Erongo Traditional Authority Trust (Namibia); DAFF/DEA (South Africa)	X	X																		
	Activity 1.1.1.3 Undertake integrated vulnerability assessments of up to 9 selected and representative communities in the selected small-scale fisheries (7 in Angola and 2 in South Africa) through participatory approaches.	INIP/IPA (Angola);, DAFF/DEA (South Africa)			X	X																
	Activity 1.1.1.4 Undertake vulnerability assessments of selected national and regional fisheries (1 each in Angola and South Africa, 2 in Namibia) and mariculture operations in each country through participatory approaches. Already available information, for example outcomes from Environmental Risk Assessments (ERAs), will be used wherever appropriate.	INIP/IPA (Angola); MFMR, MET,MME, NAMFI, FOA, NPC, Erongo Traditional Authority Trust (Namibia); DAFF/DEA (South Africa)			X	X																
	Activity 1.1.1.5 Establish a regional network of stakeholders to raise awareness and encourage stakeholder	BCC (Namibia)			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>participation in vulnerability assessment workshops and other activities.</i>																					
Output 1.1.2 Potential adaptation actions for the most vulnerable fisheries and fishery-dependent communities identified	<i>Activity 1.1.2.1. Utilising and supplementing the information gained through the vulnerability assessment, priorities will be identified for adaptation actions in the selected small-scale fisheries in Angola and South Africa. The activity will, address the whole social-ecological system as necessary and will cover at least 50% of the most vulnerable fishery systems in these two countries.</i>	INIP/IPA (Angola); MFMR (Namibia, to be decided); DAFF/DEA (South Africa)					X	X														
	<i>Activity 1.1.2.2. Utilising and supplementing the information gained through the vulnerability assessment, priorities will be identified for adaptation actions in the selected national and regional fisheries and mariculture operations in the three countries. The activity will address the whole social-ecological system as necessary and cover the fishery systems that were identified as being the most vulnerable during project preparation.</i>	INIP/IPA (Angola); MFMR MET, MME, MWT, NAMFI Erongo Traditional Authority Trust (Namibia); DAFF/DEA (South Africa)					X	X														
	<i>Activity 1.1.2.3. In each of the three countries, national co-ordinating bodies will be established, using existing structures as far as possible, to ensure cross-sectoral information flow for the project as a whole. Noting likely challenges in establishing these national bodies, BCC will facilitate the activity in the three countries and also create a mechanism to fulfil this role at regional level.</i>	BCC with support from INIP/IPA (Angola); MFMR MET, MME, MWT, Erongo Traditional Authority Trust (Namibia); DAFF/DEA (South Africa).				X				X				X				X				X
Output 1.1.3 Vulnerability assessment and planning processes incorporated into the BCC and national planning and managing frameworks.	<i>Activity 1.1.3.1 A BCC regional working group on "Incorporation of VA and adaptation plans to CC" will be established, with a fixed term of</i>	BCC					X				X											

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>operation, in order to promote improved co-ordination of vulnerability assessment, planning and advice on project prioritisation across all fisheries/sectors, both during and after the project.</i>																					
	<i>Activity 1.1.3.2. Building on the initial review completed during project preparation, in each of the three countries, all current, relevant planning and management frameworks will be identified and the most effective means of integrating fisheries vulnerability assessment and planning into them identified and incorporated into planning processes.</i>	BCC with support from INIP/IPA (Angola); MFMR, MET, MME, MWT, Erongo Traditional Authority Trust (Namibia); DAFF/DEA (South Africa).									X	X					X	X		X	X	
Output 1.2.1 Draft policies, or addenda to existing policies, submitted to the National Authorities and BCC for adoption.	<i>Activity 1.2.1.1. A gap analysis will be undertaken of key relevant <u>national</u> legislation, programmes and plans. Needs and opportunities for enhancing the mainstreaming of CC impacts on fisheries and mariculture will be identified. Draft proposals on filling identified gaps and pursuing opportunities will be developed and disseminated, with participation by relevant authorities and officials.</i>	BCC with support from INIP/IPA (Angola); MFMR, MET, UNAM, NPC, Erongo Traditional Authority Trust (Namibia); DAFF/DEA (South Africa).						X	X				X	X			X					
	<i>Activity 1.2.1.2 In parallel with 1.2.1.1 and with close interaction between the two activities, a gap analysis will be undertaken of all relevant <u>regional</u> agreements, programmes and plans. Needs and opportunities for enhancing the mainstreaming of CC impacts on fisheries and mariculture at the regional level will be identified. Draft proposals on filling identified gaps and pursuing opportunities will be developed and disseminated, with participation by relevant authorities and officials in the</i>	BCC						X	X				X	X			X					

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	three countries.																					
Output 1.2.2 Regional and national inter-agency/inter-sectoral mechanisms strengthened to ensure fisheries and mariculture sectors are well-placed within national, provincial and local frameworks.	Activity 1.2.2.1 Using the existing multi-sectoral platform of the BCC, awareness will be raised through discussions and provision of information products in the different national sectors of the importance of coordinated, multi-sectoral approaches to addressing vulnerability and adaptation of coastal dwellers to climate change.	BCC													X	X						
	Activity 1.2.2.2 In each country, working with the sensitised national and sectoral representatives on the BCC Ministerial Conference, Management Board, and other bodies, consultations will be held to identify and initiate suitable mechanisms for strengthening cross-sectoral collaboration and facilitating multi-disciplinary cooperation in preparing for and responding to climate change impacts on fisheries and aquaculture.	BCC with support from INIP/IPA (Angola); MFMR, MET, NPC, MME, MWT, NACOMA, Erongo Traditional Authority Trust (Namibia); DAFF/DEA (South Africa).													X	X						
Component 2: Piloting of improved climate-resilient fisheries practices.																						
Output 2.1.1. Community-based adaptation action plans developed and piloted in high-risk fisheries and communities	Activity 2.1.1.1. Based on the results of VAs (Output 1.1.1) and through participatory processes, local adaptive management plans will be developed and implemented, including consideration of alternative livelihoods, in at least 2 communities engaged in small-scale/artisanal fisheries in Angola and South Africa. Steps will be taken to ensure local plans are integrated into national management plans for relevant fisheries and stocks and into relevant coastal development plans.	IPA, DNP, Ministério de Agricultura (Angola); MFMR (Namibia); DAFF (South Africa)						X	X	X	X	X	X	X								
	Activity 2.1.1.2. In each country, assess the opportunities for promotion of mariculture as an adaptive strategy for fisheries and/or communities at serious	INIP/IPA (Angola); MFMR, MET (Namibia); DAFF (South Africa)						X	X	X												

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>risk from climate change or other factors.</i>																					
	<i>Activity 2.1.1.3. Drawing on and informing other activities in the project, this activity will endeavour to capture local fishers' knowledge in selected fisheries in each country on environmental variability and change, their effects on resource abundance and distribution, etc. for comparison with and enriching existing scientific information.</i>	INIP/IPA (Angola); MFMR, NAMFI, FOA, Rights Holders Associations (Namibia); DAFF (South Africa)							X	X	X	X	X	X								
Output 2.2.1 Management plans developed or strengthened to incorporate monitoring and adaptative response to climate variability and change in at least 3 national or regional fisheries.	<i>Activity 2.2.1.1. Undertake a study of the suitability and adequacy of existing institutional arrangements to address the Output and, where relevant, the need for any modifications and improvements to encompass the greater emphasis on local and community monitoring and management functions within the national fishery.</i>	INIP/IPA (Angola); MFMR (Namibia); DAFF/DEA (South Africa)						X														
	<i>Activity 2.2.1.2 Using available information (e.g. ERAs) and approaches, develop and initiate, where necessary, national adaptive management plans for at least 1 selected fishery in each country that incorporates climate change and variability, allowing for stock rebuilding where required. This should include assessing costs and benefits of implementation, including for implementing a compensation program for fishers in the event of stock rebuilding being required.</i>	INIP/IPA (Angola); MFMR, NACOMA (Namibia); DAFF/DEA (South Africa)						X	X	X	X	X	X	X								
	<i>Activity 2.2.1.3. In South Africa and Namibia, and possibly also in Angola, undertake an assessment of the current and potential role of protected areas as management and conservation tools for fisheries management, and the likely</i>	INIP (Angola), DAFF/DEA/SANParks (South Africa) MFMR, MET, NACOMA (Namibia)													X	X	X	X	X	X		

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>impacts of CCorV on their effectiveness, including implications for local fishers and communities.</i>																					
Output 2.3.1 National and regional frameworks for monitoring and disseminating information on extreme weather events and climate-induced risks in fisheries modified to address gaps in current coverage.	<i>Activity 2.3.1.1 A review of available information will be undertaken to investigate suitable thresholds that would serve as triggers to prompt warnings of extreme events. This will include thresholds for any additional threats and associated indicators that may be selected, and refining and improving existing thresholds as necessary.</i>	BCC with support from INIP/IPA (Angola); MFMR (Namibia); DAFF/DEA (South Africa).											X	X								
	<i>Activity 2.3.1.2. In full collaboration with the existing national meteorological services and other relevant environmental monitoring programmes, a GAP analysis will be undertaken of existing monitoring and warnings of extreme weather and environmental events linked to CCorV. Recommendations on addressing the gaps will be formulated and disseminated to the appropriate authorities for consideration and potential implementation, including potential capacity-building activities under Component 3,</i>	INIP (Angola); MFMR /FOA (Namibia); DAFF/DEA (South Africa)											X	X	X	X	X	X	X	X		
	<i>Activity 2.3.1.3. In selected communities in Angola the use of modern navigational and safety equipment by fishers will be promoted and supported in order to improve safety at sea.</i>	IPA (Angola)														X	X	X	X	X		
Component 3: Capacity building and promotion of improved climate-resilient fisheries practices																						
Output 3.1.1 Targeted, user-friendly information produced and disseminated to national and regional stakeholders, and to local communities in the most highly vulnerable areas.	<i>Activity: 3.1.1.1. Information produced and lessons learned from the project, together with other relevant information will be used to produce information tools and activities most suitable for the different stakeholder</i>	BCC with support from INIP/IPA (Angola); MFMR, local authorities (coastal municipalities,							X	X	X	X	X	X	X	X	X	X	X	X	X	

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>groups in each country. The information will be presented and disseminated in forms that facilitate action rather than lead to paralysis. This will include collation of existing audio-visual products and development of new ones, and other information tools (songs, plays) around gaps identified.</i>	regional councils, traditional authorities), MET, BCC, NACOMA (Namibia); DAFF/DEA (South Africa).																				
	<i>Activity 3.1.1.2 Build partnerships with local media associations – e.g, radio, film associations and national broadcasting corporations in order to disseminate information more effectively and also reach illiterate parts of the population.</i>	BCC					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.2.1 Training on climate change risks and adaptation conducted in selected communities.	<i>Activity 3.2.1.1. Making use of and extending the information dissemination under 3.1.1, at least 300 stakeholders from selected communities across the three countries will be consulted on the types of skills and capacity they require and be involved in the formulation of training activities aimed at meeting those needs. These will cover gender specific issues and needs and address often under-estimated groups such as women engaged in fish processing in small-scale fisheries and people with disabilities. Training in new technologies will also be done where appropriate. Wherever advantageous, activities will be done in collaboration with existing complementary activities and programmes by other organizations.</i>	INIP/IPA (Angola); MFMR, MET, NACOMA, MTI, NAMFI, Fisheries Observer Agency (FOA), UNAM (Namibia); DAFF/DEA (South Africa)				X			X		X	X	X		X	X	X		X	X	X	

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<i>Activity 3.2.1.2. Exchange programmes will be established for similar groups at regional or national level to facilitate exchange of knowledge and experience (e.g. between artisanal fishers in different areas and countries, mariculturists across the three countries).</i>	BCC; INIP/IPA (Angola); MFMR, NAMFI, MET, NACOMA, UNAM, NAMFI (Namibia); DAFF/DEA (South Africa)			X				X		X	X	X	X	X	X	X	X	X	X	X	
Output 3.2.2 Targeted training on climate change risks and best adaptation practices in fisheries for stakeholders from government, universities, non- governmental organizations and industry conducted.	<i>Activity 3.2.2.1. Workshops and other forums for exchange and discussion at national level will be held to inform target groups of the results and lessons learned from the project, with a particular emphasis on multi-sectoral approaches to climate change adaptation and ensuring fisheries and mariculture are given due attention. Political decision-makers and fisheries managers will be important target groups.</i>	BCC; INIP/IPA (Angola); MFMR, NAMFI, MET, MIT, NPC, NACOMA, UNAM, Navy (Ministry of Defense) (Namibia); DAFF/DEA (South Africa)				X			X				X	X			X	X	X	X		
	<i>Activity 3.2.2.2. A regular (e.g. twice yearly) newsletter on relevant news and developments will be produced, either as a stand-alone publication or as a supplement to the existing BCC newsletter. This supplement could also possibly be added to local and national newspaper as a supplement to ensure effective knowledge transfer and sharing.</i>	BCC			X		X		X		X		X		X		X		X		X	
Component 4 Monitoring & Evaluation and Adaptation Learning																						
Output 4.1.1 Project monitoring system established and functioning efficiently to provide systematic information on progress in meeting project outcome and output targets	<i>Activity 4.1.1.1 Project M&E system established and refined as necessary</i>	BCC	X			X	X			X	X			X	X			X	X			X
Output 4.1.2 Midterm and final evaluations conducted	<i>Activity 4.1.2.1 Mid-term and final evaluations undertaken</i>	FAO										X	X								X	X
4.1.3 Project-related “best-practices” and “lessons-learned” assessed, published and	<i>Activity 4.1.3.1 .A review will be undertaken of other activities and plans</i>	BCC													X	X	X	X	X	X	X	X

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
disseminated	<i>underway on CC and V in fisheries at regional and continental level in Africa (e.g. by AU, NEPAD Agency, regional bodies etc) and targeted products developed from the lessons learned in the project to inform and support selected high priority initiatives identified through the review.</i>	NACOMA, UNAM, Polytech, DRFN, MET, MME, FOA (Namibia)																				
	Activity 4.1.3.2. Representatives of BCC will promote and disseminate key results and insights gained from the project at selected priority meetings of regional and trans-continental bodies addressing CC and V in fisheries.	BCC													X	X	X	X	X	X	X	X
	Activity 4.1.3.3 Website developed, and maintained	BCC		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 3: RESULTS BUDGET

Total by Component	Year 1	Year 2	Year 3	Year 4	Year5	GEF Total	% of Total
COMPONENT 1	432,400	237,900	172,100	221,200	133,100	1,196,700	25%
COMPONENT 2	90,000	322,310	339,310	367,860	287,810	1,407,290	30%
COMPONENT 3	104,300	144,800	142,800	341,005	341,005	1,073,910	23%
COMPONENT 4	207,700	100,100	170,100	127,100	197,100	802,100	17%
PROJECT MANAGEMENT	113,000	33,000	33,000	33,000	33,000	245,000	5%
TOTAL	947,400	838,110	857,310	1,090,165	992,015	4,725,000	

Component 1

Output 1.1.1 Vulnerability assessments

Output 1.1.2 Potential adaptation actions identified

Output 1.1.3 Incorporation of VAs into planning

Output 1.2.1 Draft policies/addenda to existing policies

Output 1.2.2 Inter-agency/inter-sectoral mechanisms strengthened

US \$				Expenditures by Component						Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component1: Mainstreaming fisheries CCA					Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				1.1.1	1.1.2	1.1.3	1.2.1	1.2.2							
SALARIES PROFESSIONAL															
Project Coordinator @ PIU	Month	16	9,000	28,800	28,800	28,800	28,800	28,800	144,000	28,800	28,800	28,800	28,800	28,800	144,000
National Coordinators x 3	Month	54	2,500	27,000	27,000	27,000	27,000	27,000	135,000	27,000	27,000	27,000	27,000	27,000	135,000
Fisheries experts (3 National)	Month	60	1,500	18,000	18,000	18,000	18,000	18,000	90,000	18,000	18,000	18,000	18,000	18,000	90,000

US \$				Expenditures by Component						Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component1: Mainstreaming fisheries CCA					Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				1.1.1	1.1.2	1.1.3	1.2.1	1.2.2							
3x regional technical officers	Month	60	1,500	18,000	18,000	18,000	18,000	18,000	90,000	18,000	18,000	18,000	18,000	18,000	90,000
Procurement and Finance Office @ PIU	Month	15	1,500	4,500	4,500	4,500	4,500	4,500	22,500	4,500	4,500	4,500	4,500	4,500	22,500
TOTAL SALARIES PROFESSIONAL				96,300	96,300	96,300	96,300	96,300	481,500	96,300	96,300	96,300	96,300	96,300	481,500
CONSULTANTS															
INTERNATIONAL CONSULTANTS															
VA methodology	Days	25	600	15,000					15,000	15,000					15,000
Review + prepare proposals for incorporating CCA - regional agreement, programmes + plans	Days	25	600				15,000		15,000			15,000			15,000
NATIONAL CONSULTANTS															
Undertake VA fisheries	Days	210	300	63,000					63,000	63,000					63,000
Establish network for communication re: VA information	Days	40	300	12,000					12,000	6,000	6,000				12,000
Integration of VA assessments in planning	Days	80	300			24,000			24,000			24,000			24,000
TOTAL CONSULTANTS				90,000	-	24,000	15,000	-	129,000	84,000	6,000	39,000	-	-	129,000
TRAVEL															
PIU and national coordinators+local consultants	Lumpsum			30,000					30,000	15,000	15,000				30,000
Regional travel to workshop (20 participants, 5 days)	trip	1	10,000	10,000					10,000	10,000					10,000
Local travel to workshop (Angola, SA; 20 participants)	trips	2	1,150	2,300					2,300	2,300					2,300

US \$				Expenditures by Component						Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component1: Mainstreaming fisheries CCA					Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				1.1.1	1.1.2	1.1.3	1.2.1	1.2.2							
Local travel to workshops VA (Angola, SA, Nam; 20 participants)	trips	7	1,400	9,800					9,800	9,800					9,800
Local travel to workshops to identify potential adaptation actions (Angola, SA, 50 participants)	trips	8	5,400	43,200					43,200		43,200				43,200
Local travel to workshops (Angola, SA, Namibia, 20 participants)	trips	6	1,600			9,600			9,600			3,200	3,200	3,200	9,600
TOTAL TRAVEL				95,300	0	9,600	0	0	104,900	37,100	58,200	3,200	3,200	3,200	104,900
TRAINING & Workshops															
Regional workshop (20 participants, 5 days)	WS	1	30,000	30,000					30,000	30,000					30,000
Local workshops key stakeholders (20 participants, 1 day)	WS	2	7,850	15,700					15,700	15,700					15,700
Local workshop (20 participants, 3 days)	WS	7	17,900	125,300					125,300	125,300					125,300
Local stakeholder workshops (50 participants, 2 days)	WS	8	8,800	70,400					70,400		70,400				70,400
National workshops (20 participants, 2 days)	WS	6	13,300	79,800					79,800			26,600	26,600	26,600	79,800
Workshops (20 participants, 1 day)	WS	9	5,900				26,550	26,550	53,100				53,100		53,100
TOTAL TRAINING & MEETINGS				321,200	0		26,550	26,550	374,300	171,000	70,400	26,600	79,700	26,600	374,300

US \$				Expenditures by Component						Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component1: Mainstreaming fisheries CCA					Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				1.1.1	1.1.2	1.1.3	1.2.1	1.2.2							
CONTRACTS															
Develop and dissemination of information tools	Lumpsum	1	20,000			20,000			20,000	10,000			10,000		20,000
Suitable information products for dissemination to BCC	Lumpsum	1	30,000			30,000			30,000	15,000			15,000		30,000
TOTAL CONTRACTS				-	-	50,000	-	-	50,000	25,000	-	-	25,000	-	50,000
EXPENDABLE PROCUREMENT															
Production and dissemination	Lumpsum	2	10000			10000		10,000	20,000	10,000			10,000		20,000
Office consumables	Lumsum (4 offices, monthly)	1	12000	3,000	2,000	2,000	2,000	3,000	12,000	4,000	2,000	2,000	2,000	2,000	12,000
TOTAL EXPENDABLE				3,000	2,000	12,000	2,000	13,000	32,000	14,000	2,000	2,000	12,000	2,000	32,000
GENERAL OPERATING EXPENSES															
Miscellaneous incl. contingencies				5,000	5,000	5,000	5,000	5,000	25,000	5,000	5,000	5,000	5,000	5,000	25,000
TOTAL GOE				5,000	5,000	5,000	5,000	5,000	25,000	5,000	5,000	5,000	5,000	5,000	25,000
TOTAL COMPONENT 1				610,800	103,300	187,300	144,850	140,850	1,196,700	432,400	237,900	172,100	221,200	133,100	1,196,700

Component 2

Output 2.1.1 Community-based adaptation plans

Output 2.2.1 Climate resilient management plans

Output 2.3.1 Extreme weather and climate risks monitoring frameworks

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 2: Piloting improved climate-resilient practices			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				2.1.1	2.2.1	2.3.1							
SALARIES PROFESSIONAL													
Project Coordinator @ PIU	Month	16	9,000	48,000	48,000	48,000	144,000		36,000	36,000	36,000	36,000	144,000
National Coordinators x 3	Month	54	2,500	45,000	45,000	45,000	135,000		33,750	33,750	33,750	33,750	135,000
Fisheries experts (3 National)	Month	60	1,500	30,000	30,000	30,000	90,000		22,500	22,500	22,500	22,500	90,000
3x regional technical officers	Month	60	1,500	30,000	30,000	30,000	90,000		22,500	22,500	22,500	22,500	90,000
Procurement and Finance Office @ PIU	Month	15	1,500	7,500	7,500	7,500	22,500		5,625	5,625	5,625	5,625	22,500
TOTAL SALARIES PROFESSIONAL				160,500	160,500	160,500	481,500		120,375	120,375	120,375	120,375	481,500
CONSULTANTS													
INTERNATIONAL CONSULTANTS													
Monitoring + early warning systems. Gap analysis & design of options for strengthening.	Days	63	600			37,000	37,000			10,000	17,000	10,000	37,000
Sub-total (international)				-	-	37,000	37,000	0	0	10,000	17,000	10,000	37,000

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 2: Piloting improved climate-resilient practices			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				2.1.1	2.2.1	2.3.1							
NATIONAL CONSULTANTS													
Community adaptation plans	Days	200	300	60,000			60,000		30,000	30,000			60,000
Assessment of mariculture as adaptive strategy	Days	60	300	18,000			18,000		18,000				18,000
Collection of local knowledge in selected fisheries	Days	30	300	9,000			9,000		4,500	4,500			9,000
Assessment of institutional arrangements+ options	Days	45	300		13,500		13,500		13,500				13,500
Development of national adaptive management plans	Days	90	300		27,000		27,000		13,500	13,500			27,000
Assess the role of protected areas	Days	60	300		18,000		18,000				9,000	9,000	18,000
Sub-total (national)				87,000	58,500	-	145,500	0	79,500	48,000	9,000	9,000	145,500
TOTAL CONSULTANTS				87,000	58,500	37,000	182,500	0	79,500	58,000	26,000	19,000	182,500
TRAVEL													
Site visits Angola				1,550			1,550				1,550		1,550
PIU and national coordinators				45,000			45,000		11,250	11,250	11,250	11,250	45,000
Local travel				24,140			24,140		6,035	6,035	6,035	6,035	24,140
TOTAL TRAVEL				70,690	0	0	70,690	0	17,285	17,285	18,835	17,285	70,690
TRAINING & Workshops													
Community committees training + meetings	meetings	20	10,000	200,000			200,000		50,000	50,000	50,000	50,000	200,000

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 2: Piloting improved climate-resilient practices			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				2.1.1	2.2.1	2.3.1							
Consultations on management plans + working groups					45,000		45,000		11,250	11,250	11,250	11,250	45,000
Consultations on monitoring and EWS						48,000	48,000			16,000	16,000	16,000	48,000
Consultations - communities, government, scientists				105,600			105,600		26,400	26,400	26,400	26,400	105,600
TOTAL TRAINING & MEETINGS				305,600	45,000	48,000	398,600	0	87,650	103,650	103,650	103,650	398,600
NON-EXPENDABLE PROCUREMENT													
Equipment (navigation+ safety)	Lumpsum	1				49,000	49,000				49,000		49,000
Equipment for environmental monitoring	Lumpsum	1	45000	45,000			45,000			22,500	22,500		45,000
Vehicles (3 - one in each country to support field work)	Lumpsum	3	30,000	30,000	30,000	30,000	90,000	90,000					90,000
TOTAL NON-EXPENDABLE				75,000	30,000	79,000	184,000	90,000	0	22,500	71,500	0	184,000
GENERAL OPERATING EXPENSES													
Equipment maintenance & operations	Lumpsum			20,000	20,000	20,000	60,000		10,000	10,000	20,000	20,000	60,000
Miscellaneous incl. contingencies	Lumpsum			10,000	10,000	10,000	30,000		7,500	7,500	7,500	7,500	30,000
TOTAL GOE				30,000	30,000	30,000	90,000	0	17,500	17,500	27,500	27,500	90,000
TOTAL COMPONENT 2				728,790	324,000	354,500	1,407,290	90,000	322,310	339,310	367,860	287,810	1,407,290

Component 3

Output 3.1.1 Targeted climate information

Output 3.2.1 Targeted training of communities

Output 3.2.2 Targeted training for government, NGO, industry

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 3: Capacity Building			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				3.1.1	3.2.1	3.2.2							
SALARIES PROFESSIONAL													
Project Coordinator @ PIU	Month	16	9,000	48,000	48,000	48,000	144,000	28,800	28,800	28,800	28,800	28,800	144,000
National Coordinators x 3	Month	54	2,500	45,000	45,000	45,000	135,000	27,000	27,000	27,000	27,000	27,000	135,000
Fisheries experts (3 National)	Month	60	1,500	30,000	30,000	30,000	90,000	18,000	18,000	18,000	18,000	18,000	90,000
3x regional technical officers	Month	60	1,500	30,000	30,000	30,000	90,000		22,500	22,500	22,500	22,500	90,000
Procurement and Finance Office @ PIU	Month	15	1,500	7,500	7,500	7,500	22,500	4,500	4,500	4,500	4,500	4,500	22,500
TOTAL SALARIES PROFESSIONAL				160,500	160,500	160,500	481,500	78,300	100,800	100,800	100,800	100,800	481,500
CONSULTANTS													
NATIONAL CONSULTANTS													
Training expert(s)	Days	180	300		54,000		54,000			18,000	18,000	18,000	54,000
TOTAL CONSULTANTS				-	54,000	-	54,000	0	0	18,000	18,000	18,000	54,000
TRAVEL													
PIU and national coordinators+local consultants	Lumpsum			10,000	10,000	10,000	30,000	6,000	6,000	6,000	6,000	6,000	30,000

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 3: Capacity Building			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				3.1.1	3.2.1	3.2.2							
Regional travel for training	Lumpsum					30,000	30,000				15,000	15,000	30,000
Local travel for training					12,000	12,000	24,000				12,000	12,000	24,000
Transcontinental travel	trip	4	2,000			8,000	8,000				4,000	4,000	8,000
TOTAL TRAVEL				10,000	22,000	60,000	92,000	6,000	6,000	6,000	37,000	37,000	92,000
TRAINING & Workshops													
Training - communities					158,400		158,400				79,200	79,200	158,400
Training - Government, NGO, industry + others						176,010	176,010				88,005	88,005	176,010
													0
TOTAL TRAINING & MEETINGS				0	158,400	176,010	334,410	0	0	0	167,205	167,205	334,410
CONTRACTS													
Awareness and training material				60,000			60,000	12,000	12,000	12,000	12,000	12,000	60,000
Training plans	Lumpsum	1	20,000		20,000		20,000		20,000				20,000
Contracts budget				60,000	20,000	-	80,000	12,000	32,000	12,000	12,000	12,000	80,000
EXPENDABLE PROCUREMENT													
Office consumables	Lumsum (4 offices, monthly)	4	12000	4,000	4,000	4,000	12,000	4,000	2,000	2,000	2,000	2,000	12,000
TOTAL EXPENDABLE				4,000	4,000	4,000	12,000	4,000	2,000	2,000	2,000	2,000	12,000

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 3: Capacity Building			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				3.1.1	3.2.1	3.2.2							
GENERAL OPERATING EXPENSES													
Miscellaneous incl. contingencies				5,000	5,000	10,000	20,000	4,000	4,000	4,000	4,000	4,000	20,000
TOTAL GOE				5,000	5,000	10,000	20,000	4,000	4,000	4,000	4,000	4,000	20,000
TOTAL COMPONENT 3				239,500	423,900	410,510	1,073,910	104,300	144,800	142,800	341,005	341,005	1,073,910

Component 4

Output 4.1.1 Project monitoring

Output 4.1.2 Mid-term and final evaluations

Output 4.1.3 Dissemination of lessons-learned and best practices

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 4: Monitoring&Evaluation + Learning			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				4.1.1	4.1.2	4.1.3							
SALARIES PROFESSIONAL													
Project Coordinator @ PIU	Month	12	9,000	108,000			108,000	21,600	21,600	21,600	21,600	21,600	108,000
National Coordinators x 3	Month	18	2,500	45,000			45,000	9,000	9,000	9,000	9,000	9,000	45,000
Procurement and Finance Office @ PIU	Month	5	1,500	2,500	2,500	2,500	7,500	1,500	1,500	1,500	1,500	1,500	7,500
TOTAL SALARIES PROFESSIONAL				155,500	2,500	2,500	160,500	32,100	32,100	32,100	32,100	32,100	160,500
CONSULTANTS													
INTERNATIONAL CONSULTANTS													
M&E Expert to set up M&E system	days	40	600	24,000			24,000	24,000					24,000
Independent Evaluations	Lumpsum				140,000		140,000			70,000		70,000	140,000
Making use of and extending information	days	180	300			54,000	54,000				27,000	27,000	27,000
TOTAL INTERNATIONAL CONSULTANTS				24,000	140,000	54,000	218,000	24,000	-	70,000	27,000	97,000	191,000
TRAVEL													
PSC meetings	Lumpsum	5	25,000	125,000			125,000	25,000	25,000	25,000	25,000	25,000	125,000

US \$				Expenditures by Component				Expenditure by Year					
Description (ORACLE)	Units	No. of units	Unit Cost	Component 4: Monitoring&Evaluation + Learning			Total GEF	Year 1	Year 2	Year 3	Year 4	Year5	Total GEF
				4.1.1	4.1.2	4.1.3							
Inception workshops	Lumpsum	4	20,400	81,600			81,600	81,600					81,600
PIU and national coordinators' travel	Lumpsum			30,000			30,000	6,000	6,000	6,000	6,000	6,000	30,000
TOTAL TRAVEL				236,600	0	0	236,600	112,600	31,000	31,000	31,000	31,000	236,600
CONTRACTS													
Audits	Lumpsum	5	3,000	15,000			15,000	3,000	3,000	3,000	3,000	3,000	15,000
TOTAL CONTRACTS				15,000	-	-	15,000	3,000	3,000	3,000	3,000	3,000	15,000
EXPENDABLE PROCUREMENT													
Communication materials + publications	Lumpsum					130,000	130,000	26,000	26,000	26,000	26,000	26,000	130,000
Office consumables	Lumsum (4 offices, monthly)	4	12000	4,000	4,000	4,000	12,000	4,000	2,000	2,000	2,000	2,000	12,000
TOTAL EXPENDABLE				4,000	4,000	134,000	142,000	30,000	28,000	28,000	28,000	28,000	142,000
GENERAL OPERATING EXPENSES													
Miscellaneous incl. contingencies	Lumpsum					30,000	30,000	6,000	6,000	6,000	6,000	6,000	30,000
TOTAL GOE				-	-	30,000	30,000	6,000	6,000	6,000	6,000	6,000	30,000
TOTAL COMPONENT 4				435,100	146,500	220,500	802,100	207,700	100,100	170,100	127,100	197,100	775,100

Project Management

US\$				Expenditures by Component		Expenditure by Year					
Description	Units	No. of units	Unit Cost	Project Management	Total GEF	Year 1	Year 2	Year 3	Year 4	Year 5	Total GEF
SALARIES PROFESSIONAL											
Procurement and Finance Office @ PIU	Month	10	1,500	15,000	15,000	3,000	3,000	3,000	3,000	3,000	15,000
TOTAL SALARIES PROFESSIONAL				15,000	15,000	3,000	3,000	3,000	3,000	3,000	15,000
NON-EXPENDABLE PROCUREMENT											
Equipment office: furniture, computers, printers etc	Lumpsum			80,000	80,000	80,000					80,000
Office rent	Lumpsum			150,000	150,000	30,000	30,000	30,000	30,000	30,000	150,000
TOTAL NON-EXPENDABLE EQUIPMENT				230,000	230,000	110,000	30,000	30,000	30,000	30,000	230,000
TOTAL PROJECT MANAGEMENT				245,000	245,000	113,000	33,000	33,000	33,000	33,000	245,000

APPENDIX 4: RISK MATRIX

See Section 3.2.1.

APPENDIX 5: PROCUREMENT PLAN TEMPLATE

DATE:
PROJECT TITLE AND SYMBOL:

Ref. No.	Requirement	Unit	Estimated Quantities	Estimated Cost	Unit Price	Solicitation Method	Procurement Method	Buyer	Targeted Tender Launch Date	Targeted Contract Award Date	Targeted Delivery Date	Final Destination and Delivery Terms	Status	Other Constraints/Considerations

APPENDIX 6: TERMS OF REFERENCE (TORS)

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No 1. Draft Terms of Reference: Project Coordinator (National Consultant)

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

The Project Coordinator will work under the general supervision of the Executive Secretary of the Benguela Current Commission and in close collaboration with the FAO Lead Technical Officer and the FAO-GEF Coordination Unit in the Investment Centre in Rome (TCID), and will report to the Project Board and Project Steering Committee. He or she will have the following responsibilities and functions:

1. Be responsible for the overall technical and administrative supervision and coordination of the project;
2. Guide and backstop project partners and staff of their technical duties of the project's components;
3. Supervise the preparation of and edit technical papers for discussion and publications on project topics and contribute to publication of manuals, case studies and guidelines associated with the project;
4. Manage and supervise human resources allocated to the Project Implementation Unit (PIU) that is tasked with providing technical and administrative support to the project and which consists of a project coordinator, a finance and procurement employee, three technical experts and national coordinators;
5. Supervise and support in mentoring and identifying training opportunities for project staff;
6. Act as the Secretary for all Project Steering Committee (PSC) meetings and activities, including preparation of documents and the reports;
7. Work closely with the Project's partners and develop and maintain regular contacts and

- partnership with the them;
8. Ensure incorporation of the different stakeholder perspectives and relevant human and environmental interactions in planning and implementation of the project's components and sub-components;
 9. Establish working relations with appropriate national, sub regional and regional agencies and groups in participating countries to ensure effective implementation of project supported activities at the national and regional level;
 10. Coordinate the design of a project monitoring and evaluation system and exercise overall management responsibility of the regular monitoring and review of the execution of the components and subcomponents;
 11. Ensure preparation and submission of Annual Work Plans as well as the project's financial and technical reports as required;
 12. Represent the project in relevant meetings and conferences and facilitate coordination and integration where appropriate beneficial to the achievement of the Project's objectives;
 13. Maintain overall responsibility for proposals and bidding documents, terms of reference and performance contracts for consultants hired under the responsibility of the PMU; and
 14. Perform other related duties as required.

Minimum Requirements:

1. A post-graduate degree in fisheries or ecosystem/natural resource management, economics or a relevant social or natural science;
2. At least 12 years professional experience in the marine or fisheries sector;
3. Solid and demonstrated understanding of the management and governance aspects of the field of fisheries and the marine environment, including climate change and variability;
4. A minimum of seven years of demonstrated experience in the management of multi-country projects;
5. Proven capacity to work with and establish working relationships with medium to high-level government and non-government representatives;
6. Proven capacity as a team leader and team builder in developed and developing countries;
7. Experience in preparing project technical and financial reports for international donors; and
8. Excellent oral and written communication skills in English,

At least working knowledge of Portuguese and experience working in the Benguela Current LME area would be advantages.

Location: Swakopmund, Namibia

Duration: 60 person months (the selected candidate will be contracted for a probationary period of one year subsequent to which the contract would be extended for the remaining period of the project).

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No 2. Draft Terms of Reference: Finance and Procurement Officer (National Consultant)

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

The Finance and Procurement Officer will work under the supervision of the Project Coordinator. He or she will have the following responsibilities and functions:

1. Be responsible for the day to day management of the project’s budget including monitoring of cash availability, and for preparation of budget and project revisions for review by the Project Coordinator;
2. Coordinate the project’s operational arrangements through contractual agreements with key project partners;
3. Be operationally responsible for Letters of Agreement and Executing Agreements with relevant project partners;
4. Be in charge of preparing detailed budgets for cash transfer requests based on the AWP/B and project account cash balance;
5. Keeping the financial records and regular review of the project account;
6. Reviewing the receipts and financial reports submitted by the national project partners and BCC;
7. Preparing six-monthly financial statements of expenditures, preparing the personnel and services contracting and procurement documents and participating in contracting and procurement processes including of submission of documentation to FAO for ex-antes clearances, and preparing relevant documents for internal and external financial audits;
8. Maintain interdepartmental linkages with the FAO units for donor liaison, Finance, and other units as required;
9. Responsible for ensuring accurate recording of all relevant data for financial monitoring;

10. Responsible for ensuring that relevant reports on expenditures, forecasts and closure of projects are prepared and submitted in accordance with defined procedures and reporting formats, schedules and communication channels, as required;

Minimal Requirements:

1. Tertiary qualification in accounting, economics, finance or a directly related field;
2. At least five years of experience in managing finance and procurement for a medium-sized or larger organization, project or government department;
3. Proven capacity to work with and establish working relationships with government and non-governmental representatives;
4. Proven oral and written communications skills in English.

At least working knowledge of Portuguese and experience working in the Benguela Current LME area would be advantages.

Location: Swakopmund, Namibia

Duration: 60 person months (the selected candidate will be contracted for a probationary period of one year subsequent to which the contract would be extended for the remaining period of the project).

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No 3. Draft Terms of Reference: National Project Coordinator (3 positions, National Consultant)

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

The National Coordinator will work under the supervision of the Project Coordinator and in close collaboration with the Project Implementation Unit, the lead technical agency and the project focal point in their assigned country. He or she will have the following responsibilities and functions:

Each county will have a national coordinator at the fisheries and mariculture government department who, under the supervision of the Project Coordinator, will be responsible for the project implementation and coordination in his or her country of assignment and who will work in conjunction with the BCC project implementation unit. He or she will have the following responsibilities and functions:

1. Represent the Project Coordinator and the project in the assigned country;
2. Supervise Young Professional Officer;
3. Monitor and oversee all aspects of project implementation in the assigned country;
4. Work closely with the Project’s partners in the assigned country and develop and maintain regular contacts and partnership with them;
5. Establish working relations with appropriate national, sub regional and regional agencies and groups in the assigned country to ensure effective implementation of project supported activities at the national level;
6. Represent the project in relevant meetings and conferences at the national and regional levels and facilitate coordination and integration where appropriate beneficial to the achievement of the Project’s objectives;
7. Prepare 6 monthly national level progress reports;

8. Perform other related duties as required.

Minimum Requirements:

1. A post-graduate degree in fisheries, environmental management, economics or a relevant social or natural science;
2. At least 7 years professional experience in the marine sector;
3. Solid and demonstrated understanding of the management and governance aspects of the field of fisheries and the marine environment, including climate change and variability;
4. Proven capacity to work with and establish working relationships with medium to high-level government and non-government representatives;
5. Proven capacity as a team leader and team builder in developed and developing countries;
6. Experience in preparing project technical and financial reports for national and international donors; and
7. Excellent oral and written communication skills in English,

At least working knowledge of Portuguese and experience working in the Benguela Current LME area would be advantages.

Location: 3 positions, one each in Luanda, Angola; Swakopmund, Namibia; and Cape Town South Africa.

Duration: 60 person months (the selected candidate will be contracted for a probationary period of one year subsequent to which the contract would be extended for the remaining period of the project).

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No 4. Draft Terms of Reference: Communications and participation resource person

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

The Communications and Participation Resource Person will work under the direct supervision of the Project Coordinator. He or she will have the following responsibilities and functions:

1. Develop and implement a communications plan for the project – including data collection and management, web-site maintenance and the overall outreach to all the stakeholders and target groups;
 - a. Preparation of communication plan;
 - b. Collection and design of database management of relevant vulnerability and adaptation practices for easy access to general public, policy makers and other target audiences;
 - c. Preparation of information materials and mechanisms for public information and dissemination;
 - d. Consolidation and preparation of background materials for workshops and meetings for the project;
 - e. Responsible in the coordination and preparation of the Project’s periodic reporting (Administrative and technical);
 - f. Contribute to the design of a system for and conduct regular monitoring and review of the execution of the components and subcomponents’ activities;
 - g. Responsible for the publication and circulation of proceedings and other relevant information and background materials between BCC, FAO and national and international stakeholders;
 - h. Ensure the quality and flow of information in the project website;
 - i. Assist the Project Coordinator in creating awareness and disseminating target project information to the relevant audiences; and

- j. Prepare final report of work rendered at the end of his/her assignment.
- 2. Provide support to the Project Coordinator and the PIU in all aspects of project implementation including:
 - a. Assistance in the organization and implementation of meetings and activities, including preparation of documents and the reports;
 - b. Assisting the Project's partners in undertaking project activities and liaising with the Project's partners under the supervision of the Project Coordinator;
 - c. Collecting data and information and compiling reports for the project monitoring system;
 - d. Assistance in preparation of Annual Work Plans and technical reports as required;
- 3. Perform other related duties as required.

Minimum Requirements:

- 1. A degree in communications, development communications or its equivalent;
- 2. Experience in communications planning and implementation;
- 3. Demonstrated interest in a career in the marine or climate change adaptation sector;
- 4. Capacity to work with and establish working relationships with project partners;
- 5. Good writing skills in English; and
- 6. Ability to work with people from diverse backgrounds and very good communication skills in English or Portuguese

Working ability in the second language (Portuguese or English) and experience working in the Benguela Current LME area would be advantages.

Location: Swakopmund, Namibia.

Duration: 60 person months (the selected candidate will be contracted for a probationary period of one year subsequent to which the contract would be extended for the remaining period of the project).

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No 5. Draft Terms of Reference: Fisheries and fisheries community-based resilience resource person

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

The **Fisheries and community-based resilience resource person** will work under the direct supervision of the Project Coordinator. He or she will have the following responsibilities and functions:

1. Assist in the development and implementation of vulnerability assessments of Benguela fisheries and fisheries-communities and support the analysis and communication of assessment methodologies and results;
2. Support in the identification and implementation of climate resilience and adaptation options relevant to Benguela fisheries and dependent communities;
3. Support the development of climate change adaptation best practices guidance and documentation for the region;
4. Provide support to the Project Coordinator and the PIU in all aspects of project implementation including:
 - a. Assistance in the organization and implementation of meetings and activities, including preparation of documents and the reports;
 - b. Assisting the Project’s partners in undertaking project activities and liaising with the Project’s partners under the supervision of the Project Coordinator;
 - c. Collecting data and information and compiling reports for the project monitoring system;
 - d. Assistance in preparation of Annual Work Plans and technical reports as required;
5. Perform other related duties as required.

Minimum Requirements:

1. A post-graduate degree in fisheries or other relevant areas;
2. Demonstrated interest in a career in the marine or climate change adaptation sector;
3. Demonstrated understanding of the management and governance aspects of the field of fisheries and the marine environment, including climate change and variability;
4. Capacity to work with and establish working relationships with project partners;
5. Good writing skills in of a standard high enough to be able to write project technical and financial reports; and
6. Ability to work with people from diverse backgrounds and very good communication skills in English or Portuguese

Working ability in the second language (Portuguese or English) and experience working in the Benguela Current LME area would be advantages.

Location: Swakopmund, Namibia.

Duration: 60 person months (the selected candidate will be contracted for a probationary period of one year subsequent to which the contract would be extended for the remaining period of the project).

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No 6. Draft Terms of Reference: Climate change resource person

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

The **Climate change resource person** will work under the direct supervision of the Project Coordinator. He or she will have the following responsibilities and functions:

1. Assist in the development and implementation of vulnerability assessments of Benguela fisheries and fisheries-communities and support the analysis and communication of assessment methodologies and results;
2. Support in the identification and implementation of climate resilience and adaptation options relevant to Benguela fisheries and dependent communities;
3. Support the development of climate change adaptation best practices guidance and documentation for the region;
4. Provide support to the Project Coordinator and the PIU in all aspects of project implementation including:
 - a. Assistance in the organization and implementation of meetings and activities, including preparation of documents and the reports;
 - b. Assisting the Project’s partners in undertaking project activities and liaising with the Project’s partners under the supervision of the Project Coordinator;
 - c. Collecting data and information and compiling reports for the project monitoring system;
 - d. Assistance in preparation of Annual Work Plans and technical reports as required;
5. Perform other related duties as required.

Minimum Requirements:

1. A post-graduate degree in climate change and sustainable development, environment,

- oceanography, environmental risk management or other relevant areas;
2. Demonstrated interest in a career in the marine or climate change adaptation sector;
 3. Demonstrated understanding of the management and governance aspects of the field of fisheries and the marine environment, including climate change and variability;
 4. Capacity to work with and establish working relationships with project partners;
 5. Good writing skills in of a standard high enough to be able to write project technical and financial reports; and
 6. Ability to work with people from diverse backgrounds and very good communication skills in English or Portuguese

Working ability in the second language (Portuguese or English) and experience working in the Benguela Current LME area would be advantages.

Location: Swakopmund, Namibia.

Duration: 60 person months (the selected candidate will be contracted for a probationary period of one year subsequent to which the contract would be extended for the remaining period of the project).

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No 7. Draft Terms of Reference: Fisheries and fisheries communities planning assistant (National Consultant, one position to be based in each country)

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

The fisheries and fisheries planning assistant will work under the general supervision of the Project Coordinator and the direct supervision of the Country Coordinator in their country of assignment. He or she will have the following responsibilities and functions:

1. Assist the National Coordinator in the assigned country in all aspects related to his or her responsibilities including:
 - a. Provision of support in all aspects of project implementation;
 - b. Assisting the Project’s partners in undertaking project activities and, under supervision of the National Coordinator, developing and maintaining regular contacts and partnership with the them;
 - c. Support or, where requested, represent the National Coordinator in relevant meetings and conferences in the assigned country and facilitate coordination and integration to assist in the achievement of the Project’s objectives;
 - d. Assist in collecting data and information relevant to monitoring and evaluation of progress in the project;
 - e. Assist in reporting on project meetings, workshops and other activities as required.
2. Perform other related duties as required.

Minimum Requirements:

7. A post-graduate degree in fisheries, environmental management, economics or a relevant social or natural science;

8. Demonstrated interest in a career in the marine sector;
9. Demonstrated understanding of the management and governance aspects of the field of fisheries and the marine environment, including climate change and variability;
10. Capacity to work with and establish working relationships with project partners;
11. Good writing skills in English (and Portuguese for the Professional based in Angola) of a standard high enough to be able to write project technical and financial reports; and
12. Ability to work with people from diverse backgrounds and very good communication skills in English (and Portuguese for the Professional based in Angola).

Working ability in the second language (Portuguese or English) and experience working in the Benguela Current LME area would be advantages.

Location: 3 positions, one each in Luanda, Angola; Swakopmund, Namibia; and Cape Town, South Africa.

Duration: 60 person months (the selected candidate will be contracted for a probationary period of one year subsequent to which the contract would be extended for the remaining period of the project).

BENGUELA CURRENT LARGE MARINE ECOSYSTEM

Enhancing Climate Change Resilience in the Benguela Current Fisheries System.

BCC-FAO-GEF

No. 8. Draft Terms of Reference: Monitoring and Evaluation Specialist

Background and Tasks:

The 5-year project “Enhancing Climate Change Resilience in the Benguela Current Fisheries System” project is a partnership between the Benguela Current Commission, the governments of Angola, Namibia and South Africa, FAO and the Global Environmental facility (GEF). The goal of the project is to build resilience and reduce the vulnerability to climate change of the marine fisheries and mariculture sectors within the BCLME through strengthening adaptive capacity and implementing participatory and integrated strategies in order to ensure food and livelihood security. Specifically the project objectives are: i) to ensure that climate change and variability are recognized as drivers of change in fishery social-ecological systems and that their effects are included in strategic and tactical governance and management; ii) to raise the profile of fisheries and mariculture in local, national and regional policies and programmes addressing development and climate change in order to ensure that the sector is able to make its contribution to development, and receive the necessary attention and resources to maintain and improve this contribution; iii) through a structured vulnerability assessment identify the most vulnerable small-scale fisheries, communities and national or regional fisheries and mariculture, and improve the climate resilience of selected cases of these; iv) to strengthen national and regional services for early warnings of extreme weather events and other climate-induced risks to fisheries; and v) to strengthen capacity throughout the region and amongst all stakeholder groups to assess the risks to their livelihoods and security imposed by climate change and to be able to ensure adaptation to address those risks.

Under the general supervision of the Project Coordinator, the M&E Specialist will take the responsibility for planning and implementing the monitoring activities required to evaluate project progress and quality in meeting stated outputs and outcomes. Specifically he/she will:

1. Assist the Project Coordinator in the design and establishment of the Project’s M&E system;
2. Assist the Project Coordinator in the regular monitoring and review of the execution of the Project supported activities, as required;
3. Participate and represent the project in collaborative meetings with project partners and Steering Committee meetings, as required;
4. Undertake missions as appropriate to monitor project progress, as required; and
5. Perform other related duties as required.

Minimal Requirements:

1. Advanced university degree in a relevant field such as social or natural sciences or project management. Relevant specialized courses in M+E would be an advantage;
2. Demonstrated knowledge of sustainable marine fisheries management; and biodiversity conservation;
3. A minimum of five years experience in general programme/project related work, including experience in results-based M&E;
4. Proven writing and communication skills;
5. Ability to work in an international environment with various partners (including donors), as a member of a team; and
6. Ability to take initiatives and to work with minimum supervision.

Selection Criteria:

M&E experience; knowledge of FAO and GEF M&E requirements

Language: English

Location: Swakopmund, Namibia

APPENDIX 7: NATIONAL POLICIES AND AGREEMENTS RELEVANT TO THE PROJECT

SECTOR	ANGOLA	NAMIBIA	SOUTH AFRICA
Constitutional	Constitution of the Republic of Angola, 1992	Constitution of the Republic of Namibia, 1990	Constitution of the Republic of South Africa, 108 of 1996
Environment	Environment Framework Act, 1998	No Equivalent	National Environmental Management Act, 1998 (as amended in 2002, 2003 & 2004)
Mining, Minerals and Petroleum	Petroleum Activities Act, 2004	Petroleum (Exploration & Production) Act, 1991	Minerals & Petroleum Resources Development Act, 2002
	Geological and Mining Activities Act, 1992	Minerals (Prospecting & Mining) Act, 1992	Minerals & Petroleum Resources Development Act, 2002
	Decree on Environmental Protection for Petroleum Activities, 2000	Environmental Assessment Policy for Sustainable Development and Environmental Conservation, 1995	Environmental Impact Assessment Regulations, 2006
Maritime Zones	Territorial Sea, Contiguous Zone and Exclusive Economic Zone Act, 1992	Territorial Sea and Exclusive Economic Zone of Namibia, 1990	Maritime Zones Act, 1994
Marine Fisheries	Aquatic Biological Resources Act, 2005	Marine Resources Act, 2000	Marine Living Resources Act, 1998 (Amended in 2000)
	Decree No's 14/05, 38/05, 40/06, 28/06, 98/06 and 43/05	Regulations for the Exploitation of Marine Living Resources, 2001	Fisheries Regulations, 1998 (As amended in 2000, 2001, 2003 & 2004)
	Decree No 41/05	Fisheries Policies (Granting of Rights of Exploitation to Utilize Marine Resources and on the Allocation of Fishing Quotas, 1993)	General Fishery Policy on the Allocation and Management of Long-Term Commercial Fishing Rights of May 2005
	No Equivalent	No Equivalent	Policy for the Small Scale Fisheries Sector, 2012
Marine Aquaculture	Aquatic Biological Resources Act, 2005	Aquaculture Act, 2002	Marine Living Resources Act, 1998
	Decree No's 39/05 & 40/06	Bio-Safety Act, 2006	Sea Shore Act, 1935
	Decree No's 39/05 & 40/06	Namibia's Aquaculture Policy	Fisheries Regulations, 1998
	Decree No 9/06	Towards the Responsible Development of Aquaculture, 2001	Policy for the Development of a Sustainable Marine Aquaculture Sector
	Aquatic Biological Resources Act, 2005	Dumping at Sea Control Act, 1980	Dumping at Sea Control Act, 1980
	Oil Activities and Environmental Protection Law 39/00	Prevention and Combating for Pollution of the Sea by Oil Act, 1981 and the Amendment Act, 1991	Marine Pollution (Control and Civil Liability) Act, 1981 including Regulations Relating to the Prevention and Combating of Pollution at Sea by Oil of 1984
	Decree 495/73	Namibian Ports Authority Act, 1994	Marine Pollution Intervention Act, 1987
	Decree 412/70	Merchant Shipping Act, 1991	Merchant Shipping Act, 1951




Category	International/Regional Instrument	Angola	Namibia	South Africa
Legal	UN Convention on the Law of the Sea (UNCLOS), 1982	Ratified	Ratified	Ratified
Fisheries	The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Stocks and Highly Migratory Stocks	Ratified	Ratified	Ratified
	FAO Code of Conduct for Responsible Fisheries	Ratified	Ratified	Ratified
	International Plan of Action to Prevent, Deter and Eliminate illegal, unreported and unregulated fishing	Not Ratified	Ratified	Ratified
	International Plan of Action for the Conservation and Management of Sharks	Not Ratified	Ratified	Ratified
	International Plan of Action for the Management of Fishing Capacity	Not Ratified	Ratified	Ratified
	International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries	Not Ratified	Ratified	Ratified
	SADC Protocol on Fisheries	Ratified	Ratified	Ratified
	Commission for the Conservation of Southern Bluefin Tuna	Not Member	Not Member	Cooperating Non-Member
	International Commission for the Conservation of Atlantic Tunas	Contracting Party	Contracting Party	Contracting Party
	Commission for the Conservation of Antarctic Marine Living Resources	Not Member	Member	Member
Biodiversity	Convention on Biological Diversity (CBD)	Ratified	Ratified	Ratified

Large marine ecosystem management	Agulhas Somali Current Large Marine Ecosystem (ASCLME)	NA	NA	Member
	Gulf of Guinea Large Marine Ecosystem (GGLME)	Member	NA	NA
	Benguela Current Large Marine Ecosystem (BCLME)	Member	Member	Member
Safety & Environment	International Convention for the Safety of Life at Sea	Ratified	Ratified	Ratified
	United Nations Framework Convention on Climatic Change (UNFCCC)	Ratified	Ratified	Ratified
	Washington Declaration on the Protection of the Marine Environment from Land-Based Activities, 1995	Ratified	Ratified	Ratified
	Convention on the Conservation of Migratory Species of Wild Animals, 1979	Ratified	Ratified	Ratified
	Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar)	Not Ratified	Ratified	Ratified
	International Convention for the Regulation of Whaling	Not Ratified	Ratified	Ratified
	Vienna Convention for the Protection of the Ozone Layer	Ratified	Ratified	Ratified
	Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention)	NA	NA	Ratified
	Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region	Not Ratified	Not Ratified	Ratified
	SADC Protocol on Mining	Ratified	Ratified	Ratified




	SADC Protocol on Wildlife Conservation and Law Enforcement (1999)	Ratified	Ratified	Ratified
	SADC Protocol on Shared Watercourses	Ratified	Ratified	Ratified
Trade	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Ratified	Ratified	Ratified
Pollution	Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972	Ratified	Ratified	Ratified
	International Convention for the Prevention of Pollution from Ships (MARPOL)	Ratified	Ratified	Ratified
	International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS 1996)	Ratified	Not Ratified	Ratified
	Stockholm Convention on Persistent Organic Pollutants (POPs)	Ratified	Ratified	Ratified
	Cartagena Protocol on Biosafety	Ratified	Ratified	Ratified
	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	Ratified	Ratified	Ratified
	Montreal Protocol on Substances that Deplete the Ozone Layer	Ratified	Ratified	Ratified
	International Convention on Civil Liability for Oil Pollution Damage	Ratified	Ratified	Ratified

APPENDIX 8: PROJECTS UNDER THE FIRST BCC SCIENCE PROGRAM (2009-2014)

Norwegian-funded research projects

	Title	Implementation	Status	Reports
1.	Development of BCC SEIS	IOI	Ongoing	
2.	Spatial biodiversity assessment and spatial management, including MPAs	DEA	Ongoing	
3.	Data policy and Data Management Protocol for BCC	CSIR	Completed	 BCC Data Policy and Protocol (321.91 kB)
4.	The impacts of H2S and low oxygen on inshore marine species	MFMR	Ongoing	
5.	Interactions between demersal stocks in Angola	INIP	Ongoing	
6.	Stock definition - demersal fish resources off Angola	INIP	Ongoing	
7.	Feasibility study to gauge the need for a specialised histology unit within the BCLME region	Consultant	Completed	
8.	Environmental links to pelagic fish life cycles, abundance and distribution-governing factors	DAFF	Ongoing	
9.	Acoustic survey methods and associated errors	DAFF	Ongoing	
10.	Development of acoustic methodology for zooplankton biomass	DAFF	Ongoing	
11.	Investigations of early life history and stock identity for horse mackerel	INIP	Ongoing	
12.	Coastal monitoring network in the Benguela region	MFMR	Ongoing	
13.	Development of a Continuous Plankton Recorder (CPR) survey in the BCLME	DEA	Ongoing	
14.	Assess the impacts of Harmful Algal Blooms on the inshore environment	MFMR	Ongoing	
15.	Hake workshop	Consultant	Ongoing	
16.	Transboundary fish stock monitoring and assessment surveys	FAO Nansen	Ongoing	
17.	Seal and seabirds aerial surveys	DEA; MFMR	Ongoing	
18.	State of the Fish Stocks Report	MFMR	Complete	 State of the Stocks report 2012 (7.21 MB)  State of the Stocks Report 2011 (3.54 MB)

Projects implemented in partnership with the EAF-Nansen Project

	Title	Progress	Reports
1.	Implementing a process which allows the review (auditing) and tracking of an EAF management in the BCC region	South Africa - substantial progress has been made; DAFF has incorporated EAF into its management process; ERA workshops are facilitated by DAFF; it was proposed that a similar process be followed by Namibia and Angola Angola - review of small pelagic ERA completed with some training; ERA workshops postponed Namibia - delay in nominating focal point; ERA review for hake completed; new linefish ERA	
2.	Integrating the human dimension of an EAF into fisheries management in the Benguela region	Regional workshop held; the region is very data poor w.r.t. social indicators Regional WG meeting held where conclusions of study were drafted UCT/EEU produced a report on small-scale fisheries in the region Facilitated initiatives across South Africa The final report to be reviewed for publication	 Integrating the human dimension of an ecosystem approach to fisheries into fisheries management in the BCC region. Baseline report - South Africa (1.07 MB)  Human dimensions of small-scale fisheries in the BCLME region: an overview (1.09 MB)  Recommendations towards the collection and analysis of

			information on the human dimensions of fisheries including the development of a field monitoring program (179.32 kB)
3.	Guidance on institutional arrangements which support an EAF	Study was presented to the Management Board and reports were sent to the countries The Management Board decided that each country should activate an EAF working group; the report should be tabled through decision-makers at the national level; the Secretariat and National Coordinators should visit the fisheries ministries in the three countries to follow up; some of the recommendations are modelled on the Australian system and were thought to be unsuitable for the Benguela region	

Projects implemented under the EU-funded Ecofish project

	Activity	Implementation
1.	Work package 1: Stock Assessment Setting up of basic single stock SAM for hake species (MARAM / DTU) Setting up a web-based interface for basic SAM (DTU) Modification of existing SCAA assessment model for SA hake (MARAM / DTU) Compilation of existing data for stock assessment of horse mackerel and sardinella (MARAM/DTU)	Ongoing
2.	Work package 2.1: Genetic assessment of hake stock structure sample collection; sample analysis; data analysis (DAFF)	Sample collection and analysis completed; data analysis ongoing
3.	Work package 2.2: Improving understanding of variability in hake catchability Data preparation - survey and commercial catch rates and environmental variability (DTU / DAFF and NatMIRC) Analysis of existing data Assemblage and test of self-contained instrument package Deployment of the self-contained instrument package and recording of acoustic data from research and commercial vessels Analysis of new data	Data preparation and deployment of the self-contained instrument package are complete; other activities are ongoing
4.	Work package 2.3: Improvement and validation of techniques for determining growth rates of hake, horse mackerel and sardinella Sample collection for all species; marginal increment analysis for all species; hake mark-recapture experiments; standardisation workshop (INIP, DAFF and NatMIRC)	Ongoing
5.	Work package 2.4: Trophic position of hake, horse mackerel and sardinella in the northern Benguela ecosystem Sample collection; sample processing; publication and collection of additional samples if need be (INIP, DAFF, NatMIRC)	Sample collection and processing are complete; publication and collection of additional samples are ongoing