

Project Proposals on Sustainable Use of Living Resources

ASSESSMENT AND MITIGATION OF THE ECOLOGICAL AND SOCIO-ECONOMIC IMPACTS OF DESTRUCTIVE FISHING PRACTICES IN SUB-SAHARAN AFRICA

PROJECT NUMBER: RES -1

PROJECT TITLE: Assessment and Mitigation of the Ecological and Socio-economic Impacts of Destructive Fishing Practices in sub-Saharan Africa

REQUESTING COUNTRIES: Kenya, Mozambique, Nigeria, Ghana, and South Africa.

REQUESTING NATIONAL ORGANIZATION:

Kenya Marine and Fisheries Research Institute (KMFRI),
Ministry of Fisheries - Mozambique,
National Environment Agency (NEA) -Nigerian Institute for Oceanography
and Marine Research - Nigeria,
Ministry of Food and Agriculture – Ghana,
Department of Environmental Affairs & Tourism-South Africa (DEAT) –
South Africa.

EXECUTING AGENCIES: Kenya Marine and Fisheries Research Institute and Fisheries Department –
Kenya, Kenya Wildlife Services,
Institute for Development of Small Scale Fisheries (Ministry of Fisheries) -
Mozambique,
Nigerian Institute for Oceanography and Marine Research – Nigeria, Federal
Department of Fisheries – Nigeria, Nigerian Navy,
Department of Environmental Affairs & Tourism - South Africa,
Department of Fisheries – Ghana.

POSSIBLE PARTNERS: **Kenya:** Ministry of Environment, National Environmental Management
Authority, National Museums of Kenya.
Mozambique: Ministry for Coordination of Environmental Affairs, and
Edwardo Mondlane University.
Nigeria: the Federal Ministry of Environment, and Federal Ministry of
Agriculture.
Ghana: Marine Fisheries Research Division, Universities and Research
Institutions, National Canoe Fishermen Association, Commercial Fishing
Companies, Ghana Navy.

REQUIRED NATIONAL PARTNERS: Fisheries Department of Kenya, Ministry of Environment and
Natural Resources - Kenya, Kenya Wildlife Services;
National Institute for Fisheries research, National Directorate of Fisheries
Administration - Mozambique;
Fisheries Commission of Ghana, Department of Fisheries, Ghana, Marine Fisheries
Research Division, Ghana;
Local CBOs and NGOs, Fishing Companies, and the local communities in all
participating countries.
KwaZulu-Natal Wildlife, Eastern Cape Nature Conservation, Western Cape Nature
Conservation, Northern Cape Nature Conservation, South Africa

PRIORITY ISSUE ADDRESSED: GIWA Issue 14 & 15 – Over-exploitation of fisheries and other living
resources, and Destructive Fishing Practices

REGIONAL SCOPE: Countries from Eastern Africa (i.e. Kenya and Mozambique), and from West Africa (i.e. Ghana, Nigeria), and South Africa. Mauritania, Guinea-Bissau and the Republic of Guinea could also benefit.

PROJECT LOCATION: The project will cover the following areas:
Malindi Bay, Ungwana Bay, Gazi Bay, Diani Reefs, Wasini channel and Vanga creek of Kenya;
Coastal settlements especially Quirimbas, Sofala Bank and Maputo Bay all in Mozambique,
Coastal and estuarine waters (from River Allahein to Cape Point and the adjacent EEZ), Niger Delta –Lagos,
Keta lagoon complex in Ghana

PROJECT DURATION: 6 years

WORKING GROUP OF THE AFRICAN PROCESS: Sustainable use of living resources

2. SUMMARY

While fishery technology will advance (perhaps in particular the further development of aquaculture) wild fisheries will never yield more than their long-term sustainable biological yields. There are true limits to growth in the volumes of fish (at least the major known resources) for food and economic growth, but what is also true is that our understanding of these limits, and how natural variation and environmental intervention (over which we have no control) affect them, is relatively poor. Knowledge and understanding, even of the ways in which the vagaries of the environment affect fish stocks, coupled with good management is the key to attaining optimal yields from these resources, and achieving national food security goals.

The project aims at maximizing sustainable benefits to the local fishing communities, identification of fishing practices considered to be most destructive, identification and assessment of impacts of listed fishing practices, environmental education and awareness programmes to promote community participation and commitment of government institutions to sustainable fisheries management, and establishment of pilot programmes to improve the productivity and output from artisanal fisheries. The main activities in this project will include assessments and monitoring, sensitisation programmes, community empowerment, and initiation of pilot projects to improve productivity and fisheries management capabilities. The expected results are: improved understanding of the fishery, improved fisheries management capabilities by government and non-government institutions, sustainable utilisation of fisheries resources, improved living standards of the fisher folk and maintenance of ecosystem health. At the sub-regional, regional and global scales, threats to endangered species such as green turtles, hawksbill turtles, loggerhead turtles, and dugongs will be minimized. In addition, frequent conflicts arising from transboundary destructive fishing activities will be curbed, and the FAO code of conduct for responsible fisheries will be fulfilled.

COSTS AND FINANCING (MILLION US \$)¹

Total costs of the project can only be estimated roughly at this stage and will be worked out in more detail during Phase 1 of the project, the project development phase. Projected costs and activities for Phase 1 are shown below.

International & bilateral sources:	US\$ (Million)
<i>List required financing by potential source:</i>	10
<i>Subtotal international financing:</i>	10
<i>Co-financing: Governments in cash & kind:</i>	6.4

¹ This budget is preliminary and has not undergone a full consultation process with the respective countries. Therefore, it does not indicate the actual financial commitment that would be provided by participating countries once the project proposal and its components are finalised.

Subtotal Co-financing:

6.4

Total Project Cost: (Million US \$) 16.4

4. GOVERNMENT ENDORSEMENT(S):

The African Process received Government endorsement at the level of Ministers of Environment. In the last PREPCOM (ministers) meeting in Cape Town in September 2001 this is one of the priority projects in the thematic group on sustainable use of living resources that received endorsement. The project has further been prepared in consultation with the officials from the different governments involved. Nationally, this project will be endorsed by:

The Ministry of Agriculture and Rural Development – Kenya,
Ministry of Coordination of Environmental Affairs – Mozambique,
Ministry of Environment and Science – Ghana,
Federal Mistry of Environment – Nigeria and
Ministry of Food and Agriculture – Ghana,

5. GOVERNMENT FOCAL POINTS:

Director, Kenya Marine and Fisheries Research Institute
National Director of the Institute for Development of Small Scale Fisheries (Ministry of Fisheries),
Mozambique
Dr. A. Soilarin and Dr. Gbola Akanade - Nigerian Institute for Oceanography and Marine Research
(NIOMR)
Department of Fisheries, Ghana
Department of Environmental Affairs & Tourism - South Africa

6. AFRICAN PROCESS WG FOCAL POINT(S):

Country Co-ordinators on the Programme of Interventions of the Partnership Conference of the African Process:

Kenya: Mr. Ali Mohammed, Ministry of Environment and Natural Resources
Mozambique: Dr. Everisto Baquette, MICOA
Tanzania: Mr. Jeremiah M. Daffa, Tanzania Coastal Management Partnership
Ghana: Dr. Julius Wellens Mensah, Hydrological Services Department, Ghana
South Africa: Mr. Phakamani Buthelezi, Marine & Coastal Management, Department of Environmental Affairs & Tourism
Nigeria: Dr. Larry Awosika, Nigerian Institute for Oceanography and Marine Research

Co-ordinator and experts of the Thematic Working Group on the Programme of Interventions of the Partnership Conference of the African Process

Co-ordinator: Dr. Barry Clark, Zoology Department, University of Cape Town, South Africa

Experts: Mr. Jacob Ochiewo, Kenya Marine and Fisheries Research Institute, Kenya
Dr. Kwame Koranteng, Marine Fisheries Research Division, Ministry of Food and Agriculture, Ghana

PROJECT DESCRIPTION

1. BACKGROUND & JUSTIFICATION:

The coastal and marine environment in Sub-Saharan Africa is a source of food, shelter, transport, energy, and water for domestic use, and is a sink for human, agricultural and industrial waste. With the human population growing at rates among the highest in the world, there is increasing competition for fish stocks that are dwindling and exposed by open access. As a result, destructive fishing practices have increased as fishermen strive to maximize their catches at the expense of long-term sustainability of fish production and food security.

Destructive fishing practices have been identified as a most serious issue in a number of countries that participated in the phase 1 of the African process project. Destructive fishing practices impact severely on target stocks and are in fact also recognized among the primary causes of modification and loss of ecosystems. In Tanzania and Mozambique destructive fishing practices are closely linked to degradation of particular ecosystems such as: coral reefs, mangrove forests and seagrass beds, while in Kenya they are most frequently associated with overexploitation of fisheries and other living resources. The main destructive fishing methods that were identified in phase 1 of the African process include the use of mosquito nets (60% of the total beach seines in Mozambique have mosquito netting), beach seining, use of poison (primarily traditional plant poison, cyanide and DDT), use of dynamite, artisanal speargun fishing, and other particular harvesting methods. Dynamite fishing is notably hailed as having caused more damage than any other fishing practices in fragile ecosystems such as coral reefs.

Destructive fishing practices have been outlawed in East Africa but are still widespread. Attempts by national fisheries authorities to contain these practices have not been successful partly because the problem is transboundary in nature often involving fishers from other countries. Transboundary destructive fishing practices are also a major source of conflicts among artisanal and semi-industrial fishermen in East Africa. The use of destructive fishing practices in coral reef areas, however, causes widespread degradation and destruction of coral reefs resulting in reduced productivity. Declines in the productivity and biodiversity of the coral reefs with the corresponding declining fish catches, have resulted in loss of income to artisanal fishermen.

In Kenya, it is reported that the annual prawn landings are associated with about 70-80% by-catch in weight, which includes juveniles of commercial fish species and other marine organisms that include sea turtles and dugongs. Bottom trawling for peneid prawns adversely impact on productivity and fish diversity, while excessive by-catch and its disposal is an additional issue of concern. In the whole of the Eastern Africa Indian Ocean waters, shrimp trawlers have caused widespread disturbance to the seagrass beds. Extinctions of turtle population and loss of nesting areas has been reported (IUCN-EARO, 1996) e.g. Maziwe Island in Tanzania. Similarly the Dugong population have suffered serious decline e.g. 50% in Mozambique (Dutton, 1994) and almost 99% in Kenya and Tanzania (WWF, 2001).

Bottom prawn trawling has also raised a lot of concern at national levels in Eastern Africa, due to its impact on certain ecosystems, notably seagrass beds and prawn fishing grounds. In Nigeria, bottom trawling, use of explosives and chemicals, and use of wrong mesh sizes have been recognized as major causes of destruction to the fishing environment.

Fishery indicators of the participating countries

	<i>Kenya</i>	<i>Mozam- bique</i>	<i>Nigeria</i>	<i>Ghana</i>	<i>South Africa</i>	<i>TOTAL</i>
Marine Catch (mt.)	7,000	28,416	250,678	313,725	-	628,219
Export Value (US\$, million)	3.4	100	249	250	-	602.4
Coastline (km)	580	2,700	853	536	-	4,749
Shelf to 200 m (km ²)	8,500	68,360	46,300	23,700	-	150,760
Population (millions)	28.7	18	122.5	18	-	188.5
People Dependent on Fishing (million)	0.15	0.1	1.5	1.8	-	3.58
Per capita fish consumption (kg)	13	5-7	12.5	-	-	51.5

The use of destructive fishing practices is increasing as fishermen strive to maximize their catches at the expense of long term sustainability of fish production. The destructive fishing practices may result in irreversible environmental damage, increased economic hardships to the local fisher communities and serious health concerns. With the widespread poverty in the coastal areas of Sub-Saharan Africa and competition for the scarce resources, it is extremely essential to secure funding for this integrated project to help avert the looming future problems.

2. OBJECTIVES & EXPECTED RESULTS

This project is aimed at enhancing sustainable utilization of the marine fisheries and the marine and coastal waters for the benefit of the local population, national economies, and the global community through the control of destructive fishing practices. The Project also aims at facilitating the development of a proactive participatory fisheries management regime as a basis for improved management of transboundary and high value stocks in the East and West Africa Region.

The project objectives are to:

(i) maximize sustainable benefits to the local communities from using the fisheries resources within the region to generate food, income, and employment; (ii) control and/or eliminate destructive fishing practices in the region; (iii) promote community participation in and government commitment to fisheries management; (iv) conserve biodiversity and genetic resources for the benefit of the local, sub-regional and regional communities, and the global community; (v) harmonize national management programmes in order to reverse the damage caused by destructive fishing practices in the Sub-Saharan Africa region, and (vi) establish pilot to improve the productivity and output from artisanal fisheries.

The project will be implemented in two phases of three years each. The first phase (represented by this proposal) will provide the necessary information to improve the management of threatened fishing grounds in the coastal and marine environment, establish strategies and/or mechanisms for cooperative management by the affected countries in the Sub-Saharan Africa, identify and demonstrate practical mitigating measures, and build capacity for effective fisheries management.

The project will result in the development of policies with greater community participation, and would ensure long-term availability of fish to the local communities. Other expected results include improved fisheries management, and better health to the affected coastal communities.

3. PROJECT COMPONENTS/ACTIVITIES

The following activities will be undertaken in this project:

Component 1: Improvement of fisheries research and information base: This phase of the project is in essence project development phase during which the nature and extent of the problem (destructive fishing

practices) will be further defined and plans to address this will be formulated. Activities will include a synthesis of existing relevant information and data on destructive fishing practices in Sub-Saharan Africa, actual field studies on ecological, social and economic impacts of these fishing practices, identification of priority areas for interventions, development of database and GIS for use in decision making and the development of a plan of action for subsequent component activities of the project. Research during phase will provide information that will assist in understanding the extent of the problem and formulating optimal strategies for the alleviation of the problem. Research will concentrate on the hot spots and sensitive areas that had been identified in the phase I of the African process. Capacity building in terms of training, acquisition of equipment and development of appropriate infrastructure will be crucial for the success of this component. Each executing agency will identify and provide training and other capacity building needs.

Component 2: Community participation in fisheries management in the framework of co-management. This will be essential for the elimination of destructive fishing gears. However, appropriate incentives will be necessary to achieve this. Establishment of community based viable micro-enterprise programmes/micro-credit schemes will be a crucial means of facilitating alternative means of livelihood. The capacities of Local CBOs and NGOs will be strengthened so that they get involved in issues related to fisheries management and lead the community in adopting sustainable fishing practices. Community-Based Fisheries Management Committees (CBFMCs) will be formed where they do not exist, but where they exist they will be strengthened and/or empowered. Education and awareness programmes will be established for the coastal communities, fishers and government institutions. These programmes will be structured in such a way that they will promote sustainable fishing practices and the need for environmental protection.

Component 3: Strategic management of fisheries. This component will focus on activities such as review and evaluation of fisheries management practices in the project countries, review of national laws and regulations on the fishing industry, preparation of standards for harmonizing laws and regulations within the sub-regions, revision of policies and regulations to conform to the prepared standard, and establishment of pilot projects that could be replicated in other places. Strategies that have been successful elsewhere will be examined to determine their suitability for adoption. To successfully implement this component, training, capacity building, and technical assistance will be essential.

4. LINKAGES TO OTHER NATIONAL OR REGIONAL ACTIVITIES/ TRANS-BOUNDARY ASPECTS

Destructive fishing practices are common in the coastal countries of the Sub-Saharan Africa. Such practices are widespread within the national waters and have been recognized as an issue that needs to be addressed urgently. In addition, artisanal fishermen do not respect national boundaries, resulting in frequent complaints of migrant fishermen crossing into neighbouring countries with their destructive fishing gears such as dynamite, poison, beach seines or pull seines, small mesh size nets, etc. Destructive fishing practices are therefore a transboundary problem.

Historically, a number of donor-funded development initiatives have been undertaken in the marine and coastal environment in sub-Saharan Africa. For example the Tanga Coastal Zone Conservation and Development Program in Tanzania, which is funded by the Irish Aid, with technical support from the World Conservation Union (IUCN). The Program started in 1994 and is an integrated conservation and development initiative implemented in a number of three-year phases. The overall goal of the Program is: Sustainable use of coastal resources in Tanga Region for the benefit of present and future generations of residents, as well as other people and programs in Tanzania and East Africa. In Mozambique, there are a number of national initiatives aiming at community-based management of fisheries and other natural resources. Their main features are: local empowerment in regard to planning, management and conflict resolution, sustainable use of resources, including use of appropriate nets, conservation of breeding areas and control of fishing periods (seasons). Of particular importance are two projects: one funded by the African Development Bank for Nampula Province (still in preparation); and the other jointly funded by GEF/World Bank in Cabo Delgado and Nampula Provinces.

In Kenya, WWF is helping to develop and strengthen the network of marine protected areas. WWF is assisting the Kenya Wildlife Service to develop the Chale Marine Reserve, an area of exceptional biodiversity. Further south, WWF has helped establish Mafia Island as Tanzania's first marine park. As at

Chale, one of the priorities is to protect the ecological integrity of the marine ecosystems for the benefit of local people, who rely on them for their livelihood. Nearby, at Menai Bay in the neighbouring island of Zanzibar, WWF is identifying priority areas for conserving and managing marine resources in an area that has been heavily hit by illegal dynamite fishing. In South Africa, WWF is investigating the distribution and ecology of linefish, helping establish coastal and marine conservation areas, and studying the fish resources of St Lucia Bay and Tsitsikamma Reef, as well as undertaking a number of projects on marine mammals, turtles, and shellfish

Outside Sub Saharan Africa, lessons learnt from Coastal Community Empowerment Project (CCEP) in Philippines will be useful to this project. CCEP is International Marinelife Alliance's (IMA's) initiative that empowers coastal communities with a long history of dependence on destructive fishing practices to turn a new leaf and become active defenders of the sea. It was adopted by the United States Agency for International Development (USAID) as a component of its five-year Coastal Resources Management Program in the Philippines. Other initiatives include the ProMOLA in Indonesia whose objectives as stated in the grant agreement with Packard Foundation are: to identify problems in local level related to marine resource management; to develop local capacity to conduct investigation and monitoring of illegal and destructive practices, analyze the results, and effectively utilize them for policy work; to develop a mechanism for a joint effort of institutions and individuals to monitor marine resource management in Indonesia; and to promote the integration of marine and coastal resource management into the Community Based Coastal Resource Management approach through local and national policy advocacy and campaign. Some of these initiatives have addressed priority environmental and socio-economic concerns, but only in small areas but not in a holistic or coordinated manner. Lacking coordinated management and the required capacity for information sharing across the entire region and at sub-regional levels, these smaller projects have often not realized optimal output, even though they could have succeeded in their own contexts. This project is an integrated research and management initiative that seeks to obtain a comprehensive understanding of the impacts of destructive fishing practices, and to establish sustainable management systems across the region.

This project addresses the concerns of both the Nairobi and Abidjan Conventions. Poverty is pervasive among the fishing communities in the Sub-Saharan Africa and is a major underlying cause of destructive fishing practices. Fishermen need to be educated as to the long-term impacts of destructive fishing practices and require assistance to convert to more sustainable harvesting practices. Management efforts need to be coordinated and harmonised across the sub-region in order to provide effective and efficient intervention. Since many projects/programmes have been implemented successfully in some regions, lessons learned from some of the successful programmes in Sub-Saharan Africa as well as other projects in Philippines and Indonesia, will be useful to this project.

5. DEMONSTRATIVE VALUE & REPLICABILITY

Since the problem of destructive fishing practices is widespread, the project has the potential of being replicated in other countries that are experiencing the same problem.

6. RISKS AND SUSTAINABILITY

No major problems are anticipated in the implementation of the project. Since sustainability requires stakeholder ownership and continuous provision of funds. The Sub-Saharan Africa countries involved in this project have researchers and natural resources managers who are currently involved in fisheries research and management, and who have actively participated in the African process from inception. With active facilitation by ACOPS, IOC-UNESCO and UNEP, the countries involved prepared the project proposal themselves, and in the process demonstrated their technical competence, strong sense of collaboration and ownership, all of which are essential for the implementation of the project.

This project will therefore strengthen and harmonize the ongoing initiatives in the region. The project fits in the mandates of the various fisheries research and management institutions, and ministries of environment in the region. The research institutions will help in developing and demonstrating technical options necessary for linking ecological stability of the fishing environment with economic satisfaction of the coastal fishing communities. This will be achieved through multidisciplinary and participatory research, and education and

awareness. The research institutions will be charged with the full responsibility of implementing the research, which is the first phase of the project. The fisheries management authorities will help in implementing fisheries extension, strengthen and harmonize policies and laws, and enforcement. They will take full responsibility for implementing the management phase of the project. Full collaboration of the fisheries authorities/departments at sub-regional level will be fundamental to the achievement of this phase. Throughout the project, arrangements will be made to involve local communities.

Considering continuity of project implementation in the longer term, there is a risk posed by weakening economies of the Sub-Saharan Africa countries. In as much as these countries are willing to give full support to the project, the performance of their economies cannot allow them to allocate higher budgets to sustain a regional fisheries management initiative in the long-term. However, since the countries involved have collaborated well during the preparation of the project, and the project provides for low risk options for collaboration on technical and management issues. Confidence will be steadily built during implementation.

However, the level of risk associated with the proposed project is considered “acceptable” in the context of the clear need to support this renewable natural resource sector in the Sub-Saharan Africa and the stated commitment to this process.

1. A number of measures have nevertheless been incorporated into project design to mitigate this risk where possible:

- The objectives of the project are clear and accepted by the Region as realistic in the project time frame
- The approach to identification of the linkages with other initiatives has been highly participatory and inclusive and the design reflects this;
- The conduct of pilot projects during implementation before attempting to implement their results in appropriate ways region-wide will allow a flexible approach to project management;
- Maximization of National and Regional expertise, and
- An emphasis on both internal and external monitoring should reduce the risk of failure.

2. For the purposes of risk management, minimum acceptable levels of project performance are set out below. The project will fail if:

- activities at the national and regional levels are not co-ordinated with all participants, including other assistance partners; and
- there is no broad agreement on the respective roles and responsibilities of governmental and non-governmental service providers by the end of the project.

3. To assist in the assessment of risk, a table of risks and assumptions as identified in the Logical Framework is prepared in table below. In this, informed judgements on the probability of occurrence of the identified risk/assumption were assessed and a level of impact of that risk assigned. The conclusion of this exercise was that the project should be considered to be “low ” risk.

The project risks are identified in the logical framework. In terms of conditionality, it is expected that the national governments and other parties (donors, private sector, NGOs) will ensure that their participating institutions are provided with adequate budgetary means in the future to maintain the data gathering/processing stock assessment and approaches to collaborative management of transboundary stocks established through project support.

7. STAKEHOLDER PARTICIPATION

The research institutions and fisheries departments (fisheries regulatory authorities) will play a central role in the implementation of the project. The National Environmental Management Authorities from the respective countries will play oversight roles. It is recognized that involvement of local communities will be crucial to the success of the project and the capacity of a number of CBOs and NGOs that have interests in the marine environment will be strengthened accordingly to enable them lead the communities in adopting wise fishing practices. The local beach management units will be strengthened where they exist as a means of involving communities in co-management. The Governments of the participating countries will contribute both financially and in kind to the implementation of this project. The international community and donor agencies will be approached and asked to provide financial support for the implementation of the project.

The donor agencies would as well appoint a panel of experts who would regularly review progress of the project.

Local community participation in the management of coastal areas through integrating conservation and development activities builds on the principle that local communities must be involved in devising and implementing ways to protect the environment.

Such processes often result in more comprehensive, efficient and successful management than would occur otherwise.

Community groups can play an important part in the enforcement of environmental legislation. The success of such approaches depends on readily available information, in non-technical terms, to help the public - and particularly community groups - to monitor their environment and seek redress if necessary.

Typical approaches in obtaining participation through consultation include:

- the creation of consultative committees;
- public meetings;
- informal consultations with stakeholders;
- the publication of discussion papers; and
- the use of public media to inform and provide a forum for discussion and promotion of the active role of local NGOs.

Components of “PUBLIC INVOLVEMENT PLAN”

- Stakeholder identification;
- Information dissemination and consultation;
- Stakeholder participation; and
- Social and participation issues.

8. **PROJECT MANAGEMENT & IMPLEMENTATION ARRANGEMENTS**

1 Institutional Arrangements

One of the most frequent constraints on achieving the project goals and objectives, is the lack of appropriate institutional arrangements. Project management and implementation require a high level of integration within and between institutional structures. A high level of **horizontal integration** is particularly necessary between sectoral institutions at the planning stage and a high level of **vertical integration** is necessary within institutions at the implementation stage.

The linkages between the participating institutions have to be created or strengthened. Where no such institutions exist, a new institutional arrangement may need to be created.

Existing institutional structures may be composed of government and local authority representatives. The successful achievement of the project will require the active participation of the stakeholders in the public and the private sectors in many of the institutional arrangements. This generates the need for **building human resources capacity**.

Institutional arrangements are needed at three different levels for taking specific responsibilities:

- National
- Sub-regional
- Regional

For efficient implementation of the project, there is need for an overall management structure in the form of a regional steering committee to undertake coordination. This committee will appoint an executive secretary/officer who will be supported by a modest staff. The committee would liaise with the executing organizations and governments and be responsible for overall monitoring, and preparation of progress reports for decision making about the whole project. The secretariat would organize meetings to appraise progress and resolve disputes if any.

At national level, a lead institution will be identified to oversee implementation of the research phase. Another institution, especially the main institution responsible for the management of fisheries in each country, will implement the fisheries extension, strengthen policies and laws, and undertake enforcement.

In Kenya, the research phase of the project fits into the mandate of the Kenya Marine and Fisheries Research Institute (KMFRI). KMFRI has a long history of undertaking multidisciplinary research on fisheries and other marine sciences in the country, and will provide laboratory space for the project. Currently KMFRI has 40 researchers handling different aspects of marine sciences and will provide ideal manpower for the project. In Mozambique, there is a small group of researchers who are currently involved in marine research. In addition, Mozambique has one of the oldest marine research stations in the West Indian Ocean region, located at Inhaca. In Tanzania, the Institute of Marine Sciences (IMS) has a long history of research in fisheries and other marine sciences. A number of multidisciplinary studies have been undertaken here and this project should tap on this. The Nigerian Institute for Oceanography and Marine Research in Lagos is known for excellent research in marine sciences and the phase I of the project fits in its mandate. The in-country project manager and head of the project implementation unit. He will be responsible for the day-to-day implementation and management of the project. He will report to the Agriculture and Natural Resources (ANR), a working national structure that has coordinates and gives policy guidance and general oversight of such projects. NEA is the Secretariat of this Working Group. At the sub regional level the Sub regional Fisheries Commission will coordinate the initiatives developed within this project using the relevant equipment and materials available within the Commission.

Regarding fisheries management, the Fisheries Department in Kenya is responsible for administration and enforcement of fisheries regulations in the country. Nigeria has the Federal Department of Fisheries that is responsible for fisheries management with full support from the Nigerian Navy, while in South Africa, the Department of Environmental affairs and tourism will be responsible for implementation of the project.

9. PROJECT FINANCING & DURATION

The total cost of the project is estimated at US\$16.4 million as shown in the table below. The governments would contribute US\$6.4 million to the project. However, this budget is preliminary and has not undergone a full consultation process with the respective countries. Therefore, it does not indicate the actual financial commitment that would be provided by participating countries once the project proposal and its components are finalised

Component & Activity Financing

(US\$ millions)

	External Source of Funds			National Government (s)		Total
	Source 1 (Million US\$)	Source 2 (Million US\$)	Source 3 (Million US\$)	Cash (Million US\$)	In-kind (Million US\$)	(Million US\$)
Component 1: Improvement of fisheries research and information base	1.2	1	0.9	0.6	1.5	5.2
Synthesis of existing data & information	0.2	0.2	0.1	0.1	0.2	0.8
Ecological studies	0.4	0.4	0.4	0.2	0.8	2.2
Socio-economic studies	0.4	0.2	0.2	0.2	0.4	1.4
Database & GIS	0.2	0.2	0.2	0.1	0.1	0.8
Component 2: : Community participation in fisheries management	0.7	0.7	0.7	0.4	1.1	3.6
Strengthening CBOs & NGOs, and Community-Based Fisheries Management Committees (CBFMCs)	0.3	0.3	0.3	0.1	0.5	1.5
Education & awareness programmes	0.2	0.2	0.2	0.2	0.3	1.1
Incentives to fishers/viable micro-enterprise programmes/ credit schemes	0.2	0.2	0.2	0.1	0.3	1
Component 3: Strategic management of fisheries	1.6	1.6	1.6	0.8	2	7.6
Review and evaluation of fisheries management practices	0.1	0.1	0.1	0.05	0.15	0.5
Review of national laws and regulations on the fishing industry	0.1	0.1	0.1	0.05	0.15	0.5
Preparation of standards for harmonization of policies within sub-regions and revision of national policies and regulations	0.2	0.2	0.2	0.1	0.3	1
Pilot projects/ transfer of technology & lessons learned	1.2	1.2	1.2	0.6	1.4	5.6
TOTAL	3.5	3.3	3.2	1.8	4.6	16.4

10. MONITORING, EVALUATION & DISSEMINATION

The project is a combination of fisheries research, capacity-building, support to fisheries management authorities for effective extension, monitoring, control and enforcement, co-management, and joint strategic management of fisheries to eliminate destructive fishing practices and enhance sustainable utilization of fisheries resources. The main concern is to eliminate or minimize destructive fishing practices in the region.

Project monitoring and evaluation will be both participatory and continuous with quarterly progress reporting and reviews at both national and sub regional levels. A mid term project review will be conducted with a view to determining the validity of the initial assumptions, and where necessary re-orient the project as appropriate to reflect the prevailing situations on the ground. Both quantitative and qualitative indicators will be used in the process of monitoring and evaluation.

Logical framework analysis

Summary	Objectively verifiable indicators	Means of verification (monitoring focus)	Critical assumptions
Overall goal of the intervention	Rate of exploitation vs. optimal exploitation levels, net benefits accruing to the communities	Participatory and continuous monitoring Reviews at national & sub-regional levels	Support from the development partners Total commitment by the implementing agencies
Objectives of the relevant National Programmes and the country/regional strategy	Assessment reports on different types, forms, extent & degree of destruction on the fishing grounds.	Participatory and continuous monitoring	Financial support from both the development partners and the participating governments
Outcomes that lead to the achievement of the outlined regional and national objectives. Changes due to intervention (project impact)	<ul style="list-style-type: none"> ● Reduced/increased number of reported cases of destructive fishing practices ● Establishment of research information base for management ● Capacity building within implementing agencies ● Effective community participation in fisheries management ● Establishment of functional pilot projects Development of long term fisheries management strategy for Sub Saharan Africa.	Participatory and continuous monitoring Reviews at national & sub-regional levels	<ul style="list-style-type: none"> ● Financial support from both the development partners and the participating governments; ● Commitment by the implementing agencies ● Full community participation in the implementation process
Results to be delivered by project which will enable necessary changes (project outputs)	Assessment reports on different impacts of destructive fishing practices Plans designed to address the problems	Participatory and continuous monitoring	As above.
Components/Activities to be implemented in order to obtain planned results (project components)	<ul style="list-style-type: none"> ● Joint & national investigations ● Quarterly reporting of research results ● Establishment of database and GIS facilities 	<ul style="list-style-type: none"> ● Participatory and continuous monitoring with reviews at national & sub-regional levels ● No. of established databases & GIS capacity ● No. of community/ stakeholder training workshops 	<ul style="list-style-type: none"> ● Adequate funding ● Commitment by researchers ● Effective cooperation with local fisher communities

	<ul style="list-style-type: none"> ● Training of communities ● Support to CBOs & NGOs ● Micro-enterprise programmes ● Review meetings/work-shops for national laws ● Documentation of standards for harmonization of policies and regulations ● Establishment of pilot projects 	<ul style="list-style-type: none"> ● No. of CBOs & NGOs involved and the level of support given to them ● Level of success of micro-enterprise programmes/ credit schemes ● No. of successful meetings/workshops ● Sub regional collaboration, and documentation of standards ● Performance of the pilot projects 	<ul style="list-style-type: none"> ● NGOs & CBOs will be committed to the intervention ● Funds will be available for the establishment of micro-enterprise programmes/credit schemes, & communities will be trained to ensure effective management of these programmes. ● Commitment by the review team ● Collaboration between all participating countries
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