

Project Proposals on Pollution

PREVENTION OF POLLUTION FROM SHIPPING ACTIVITIES AND STRENGTHENING OF NATIONAL AND REGIONAL OIL SPILL MANAGEMENT SYSTEMS IN SUB – SAHARAN AFRICA

1. Identifiers

Project Number: POL - 3

Project Title: Prevention of Pollution from Shipping Activities and Strengthening of National and Regional Oil Spill Management Systems in sub – Saharan Africa

Tentative requesting Country (ies): Nigeria, Cote d'Ivoire, South Africa, Ghana, Kenya

Requesting National Organizations:

Country	Organisation
Nigeria	Nigerian Institute for Oceanography (NIOMR), Ibadan University Linkage Center, Niger Delta Development Commission (NDDC)
Cote d' Ivoire	Centre de Recherches Oceanologiques
South Africa	Department of Environmental Affairs and Tourism(DEAT)
Ghana	Environmental Protection Agency
Kenya	Ministry of Transport and Communication

Executing Agencies:

Country	Agency
Nigeria	Federal Ministry of Environment
Cote d' Ivoire	Ministry of Environment and Quality of Life
South Africa	Department of Environmental Affairs and Tourism(DEAT), Coastal Provincial Departments
Ghana	Ministry of Environment and Science
Kenya	Kenya Ports Authority

Required National Partners:

Country	Partners
Nigeria	Oil Producers Trade Sector (OPTS), Department of Petroleum Resources (DPR), Ibadan University Linkage Center, Nigerian Ports Authority (NPA), African Business Roundtable (ABR)
Cote d' Ivoire	Centre Ivoirien Anti Pollution (CIAPOL)
South Africa	Department of Transport (South African Maritime Safety Authority), Ports Authority
Ghana	Ghana Navy, Ghana Ports and Harbours Authority
Kenya	Oil Spill Mutual Action Group, Petroleum Institute of Kenya, National Environmental Management Authority

Priority Issue(s) Addressed: Chemical Pollution, Spills, Modification of Ecosystems, Decreased Viability of Stock through contamination and disease, Man -induced changes in the physical environment.

Regional Scope: Nigeria, Cote d'Ivoire, South Africa, Ghana, Kenya Cameroon, Gabon, Benin, and Togo.

Project Location:

Country	Project Locations
Nigeria	Niger Delta, Lagos Port, Port Harcourt Port, Calabar Export Processing Zone.
Cote d' Ivoire	Abidjan Port Complex
South Africa	All coastal Provinces
Ghana	Accra Metropolis, Tema Port, Takoradi Port
Kenya	Mombasa Port

Project Duration: 5 years

Working Group of the African Process: Pollution

2. Summary:

The problem of marine pollution, especially oil spills, is widespread in the sub-region. According to the ITOPF website, all participating countries have had previous spill experience. Some of the spills are major while others are minor. Reported impacts also vary from incidence to incidence, and, country to country. Thus, irrespective of oil production status, the issue of oil spills is significant and common in the region and should be addressed because of the negative ecological health and livelihood impacts.

The broad objectives of this project are; to maintain, protect and enhance the quality of the region's marine environment, ensure rational and effective management of marine pollution, especially oil spills, to facilitate the ratification and implementation of all relevant global and regional conventions that deal with marine pollution, in particular oil pollution, and to ensure that necessary arrangements and mechanisms are in place to minimise ecological and other damages in the event of oil spills. Accordingly, project components will address diverse related issues such as pollution reduction measures, effective legislation, workable contingency arrangements, awareness, participatory approach involving all stake-holders and appropriate human resources development.

The project will result in healthier and more productive coastal environments, restoration of ecological integrity and minimisation of socio-economic impacts that result from oil spills. The project will also ensure that national obligations are met in respect of international treaties and conventions such as MARPOL 73/78 and UNCLOS III.

In the event of oil spills, the coastal area is usually the most impacted. In sub-Saharan Africa, there are several coastal communities whose livelihood usually revolve around the exploitation of biological resources in their environment. Besides, as in other parts of the world, the coastal area is preferred for urbanisation and industrialisation as well as amenities for recreation and tourism. This multiple-usage and its socio-economic benefits can be vitiated by degradation resulting from oil spills.

The project will ensure that appropriate marine pollution, and in particular oil spill management strategies, are in place in all participating countries. It is noteworthy, that this proposal is complementary to extant governmental and private sector initiatives. For example, in Kenya, the government has already established a Task force on Review of Maritime Legislation on Oil Spill Preparedness. In Nigeria, government has also established the Niger Delta Development Commission to address environmental and socio-economic problems of the area which are closely linked with oil industry activities. The project also has linkages with other national and international initiatives which are more fully described in section 4. Furthermore, the project will draw from the experiences of the Integrated Problem Analysis and try to address immediate and or root causes identified in the causal chain analysis carried out in that phase. In all participating countries, the coastal area which is very prone to the impacts of oil spills has enormous living and non-living resources, threatened and endangered species, heritage sites, human settlements and highly valued properties all of which are at risk in the event of spills. Thus, ecological, political, biodiversity conservation, coastal area management, livelihood issues, food security and poverty alleviation are germane.

The benefits derivable from this project are many: Prevention of the degradation of an area that sustains bio-

diversity, livelihood and socio-economic activities is a reasonable imperative.

Furthermore, execution of this proposal will ensure that participating countries meet their obligations with respect to international treaties and protocols which have either been ratified or are to be ratified. It is also noteworthy that a cleaner, healthier and more productive regional coastal area is but part of coasts on a global scale. Coasts world-wide are immensely beneficial and are multiple-usage amenities. It is important that these benefits are not vitiated by oil spills and indeed other anthropogenic activities.

3. Costs and Financing (Million US \$)

International & bilateral sources:

	Subtotal international financing	US\$24,680,000:00
Co-financing:	Governments in cash & kind:	
	Subtotal Co-financing	US\$6,170,000:00

Total Project Cost: US\$30,850,000:00

Please also refer to section 9 for more details

4. Government Endorsement(s)

Country	Status of Endorsement
Nigeria	The Ministry of Environment
Cote d' Ivoire	Ministry of Environment and Quality of Life
South Africa	Ministry of Environmental Affairs and Tourism
Ghana	Ministry of Environment and Science
Kenya	Ministry of Environment

5. National Technical Focal Point(s)

Country	Government Focal Point(s)
Nigeria	Mr. L. F. Awosika, Nigerian Institute for Oceanography and Marine Research (NIOMR), Lagos – Nigeria,
Cote d' Ivoire	Dr. Jacque Abe, Centre de Recherches Oceanologiques, Abidjan, Cote d'Ivoire
Tanzania	Dr. Sylvia Shayo Temu, Expert for the Working group on Pollution, University of Dar es Salam, Tanzania
South Africa	Minister Ministry of Environmental Affairs and Tourism
Ghana	Minister Ministry of Environment and Science
Kenya	Minister Ministry of Environment

6. African Process Working Group Focal Point(s)

Country	African WG Focal Point(s)
Nigeria	Dr. E. O. Oyewo, Expert for the Working group on Pollution, Nigerian Institute for Oceanography and Marine Research (NIOMR), Lagos – Nigeria
Cote d' Ivoire	Dr. Aka Marcel KOUASSI, Regional co-ordinator for the working Group on Pollution, Centre de Recherches Oceanologiques, Abidjan, Cote d'Ivoire
Tanzania	Dr. Sylvia Shayo Temu, Expert for the Working group on Pollution, University of Dar es Salam, Tanzania

PROJECT DESCRIPTION

1. **Background & Justification:**

1.1 **Background**

1.1.1 **Summary of pollution problems from shipping and related maritime activities.**

The marine environment of sub-Saharan Africa is constantly exposed to threats from international shipping, especially large tankers, and from the current and planned exploration of oil and gas reserves in the region. The legal basis for taking action to prevent the potentially devastating consequences of this hazard is already in place, particularly in various articles of Section 5 of the United Nations Law of the Sea (UNCLOS III), in MARPOL 73/78 and in the Abidjan and Nairobi Conventions and their respective emergency protocols, as well as in several other international conventions and agreements governing marine pollution. However, the framework for response to marine pollution, especially oil spills, varies considerably throughout the region. Furthermore, this disparity in the legal and institutional framework, including the adoption of National Contingency Plans, is matched by a similar disparity in the availability of equipment stockpiles for combating pollution incidents.

Exploration and exploitation of oil is usually carried out in the coastal area of oil producing countries. For example, in Nigeria, such activities be they on land or offshore are in the coastal area. Even when the best technologies are employed and necessary precautions are taken, oil spills still occur. Therefore, in spite of the enormous economic benefits derivable from oil industry activities, spills and their negative ecological and socio-economic impacts are possibilities that must always be borne in mind. A major consideration here is the question of cost. While there is no doubt that these impacts have cost and should be determined. The question of acceptable valuation is contentious as it usually attaches monetary value to damaged resources without due cognizance of indirect and bequest values. It is thus noteworthy, that Groombridge and Jenkins (1996) recognised the need for and proposed the adoption of total economic valuation which reflect direct use values, option and existence value as well as indirect values which tend to mix both. Perhaps it should be mentioned that in the sub-region, and in spite of their usefulness, there is a dearth of information on the economic valuation of impacts.

In Nigeria alone, between 1970 and 1982, there were 1,581 reported spills involving two million barrels of oil. In 1998 and 1999, 242 and 319 spills respectively were reported. Furthermore, between 1976 and 1990, A total of 2,796 spill incidents were reported while the estimated total quantity spilled in the period was 2,105,393 Barrels (Oyekan, 1997)

In Cote d'Ivoire, numerous small spills have occurred in the vicinity of the refinery and terminal at Abidjan. There have also been five major spills all resulting in the contamination of the Lagoon and accompanying beaches (ITOPF)

In Kenya, a pollution incident in 1998 resulted in the spilling of 5,000 tonnes of fuel into a mangrove creek.

In South Africa, the prevailing sea conditions have resulted in many oil pollution incidents (ITOPF): Notable ones include the bulk carrier APOLLO SEA which sank in 1994 off Capetown contaminating beaches and oiling penguins as well as that of the TREASURE which sank in 2000 also off Capetown spilling HFO and affecting two large breeding colonies of African Penguins on Roben and Dassen Islands.

This last example demonstrates the fact that even where a country does not produce oil, being subtended by a shipping route carries with it risks of oil spill impacts.

Spills are mostly associated with accidents and mechanical failures but sometimes sabotage by restive and disgruntled groups. According to a World Bank report quoted in the Nigerian report on Integrated Problem Analysis, the incidence of sabotage-linked spill increased from 10 to 13 % in Delta State of Nigeria between 1991 and 1994. A report in the same document, credited to Shell Petroleum Development Corporation (SPDC, 1999) also contains reports on celebrated instances of sabotage. Thus the issue of community

relations must be built into the entire equation of oil spill management.

The impact of an oil spill depends among other factors, on;

1. The type of oil
2. The volume spilled
3. The nature of the spillage (e.g. continuous or intermittent)
4. The nature and ecological sensitivity of the impacted environment
5. The prevailing meteorological and or oceanographic conditions etc

Known and potential impacts include:

- Mass mortality and or tainting of fish and other aquatic resources
- Ground water contamination
- Abandonment of fishing grounds and associated livelihood pursuits
- De-vegetation and related ecological damage
- Loss of biodiversity in breeding grounds
- Loss of drinking and industrial water source
- Reduction of land area available for agriculture
- Increased economic burdens of pollution clean-up, population rehabilitation etc
- Loss of recreational facilities and aesthetic values of the environment
- Impairment of human health
- Worsened rural under-development, poverty and heightened community embitterment (Oyewo, 1992).

Further information on the environmental impacts of oil industry activities in general are contained in Annexe 1.

1.1.2 Resources at risk

The resources of the coastal area of sub-Saharan Africa are enormous, varied and prone to the impacts of marine pollution, in particular oil spillage:

The artisanal fisheries of the sub region is largely clupeid-based. The total yearly landings of the sector are 67,000, 350,000 and 40,000 tons respectively for Cameroon, Ghana and Cote d'Ivoire (Ibe et al., 1998). In addition, there are other important pelagic and demersal stocks in the lagoons and estuaries and in particular, deeper waters.

There are also dense vegetations of several plant species of ecological, economic and medicinal values. Mangroves with particularly high densities in the Niger Delta deserve special mention because they provide sanctuaries, breeding grounds and refuges for many commercial species. Mangroves are also found along the coastal Lagoons of Cote d'Ivoire (Nicole et al., 1994) and Kenya. The commercially important marine and brackish water fish and shell fishes include species from such families as Scienidae, Polynemidae, Cynoglossidae, Ariidae, Pomadasyidae, Gramistidae, Carangidae, sparidae, Scombridae, Panaeidae, Geryonidae and Portunidae etc. In Nigeria alone, about 200 species from this group have been identified (Oyewo et al., 1998).

In addition, it has been estimated that almost 500 tons of shrimps are caught annually from Nigerian coastal waters.

There are also extensive and productive wetlands. In Ghana for example, there are estuarine, open lagoon and closed lagoon wetlands and swamps with their associated communities.

In South Africa as well as Kenya, there are also highly valued coral reefs

The importance of the foregoing is the fact that these resources may be impacted by oil spillage resulting in

the loss or vitiation of associated ecological, economic and social benefits in all participating countries.

1.1.3 Strengthening of National and Regional Capacities for Oil Spill Management

All participating countries have identified inappropriate human capacity, inadequate laws and poor enforcement as constraints in national marine pollution and oil spill management systems including National Contingency Plans.

This proposal thus envisages that all states in the region will have comprehensive and up-to-date national contingency plans (NCP) which will be strengthened by the backing of appropriate legal systems in each of the states. It is also hoped that appropriate stockpiles of pre-positioned equipment will be in place or, at least, that the mechanisms for acquiring such equipment will have been approved.

The whole component is essentially an act of institutional capacity building. It is therefore envisaged that appropriate experts from outside the region will work alongside designated officials in each of the countries in order to bring their know-how and expertise to bear in the preparation of appropriate national systems. The purpose of preparing national contingency plans is to establish the national framework for preparing for and responding to marine pollution by oil within the waters under the jurisdiction of each member state of the region.

It was also envisaged from the outset and is enshrined under the Emergency Protocols to the Abidjan and Nairobi Conventions that regional emergency centers should be established in the region. The objective of the centers is to strengthen the capacity of the countries of the region and to facilitate the co-operation between them in order to combat pollution by oil and other harmful substances in cases of marine emergencies. It is also intended to assist strengthen Contracting Parties' capabilities to combat pollution and to co-ordinate and facilitate information exchange, technical co-operation and training. Other merits of a regional approach to the strengthening of oil spill management capabilities are discussed in the segment on Components and Activities.

1.1.4 Provision of Port Reception Facilities

Most of the countries in the region do not have port reception facilities and are thus unable to fulfill their obligations under MARPOL 73/78 were they to ratify the convention. Consequently, ships for which such facilities are meant may discharge pollutants in international waters and create problems including oil pollution from ballast waters, the introduction of alien species and the distribution of disease causing organisms. Ships will have no excuse for these undesirable discharges if Port Reception Facilities are provided.

There is also an urgent need for the countries of the region to develop integrated waste management systems in port towns and cities because of the overlap between municipal and port waste management. This would involve a Survey of the existing approach/system for the management of all types of wastes in port cities and towns as well as port reception facility requirements as envisaged in this proposal.

1.1.5 The nuisance of automotive crank case oil

In the sub-region, a lackadaisical approach to the disposal of used crank case oil is widespread and results in indiscriminate discharges into gutters, drainages, small streams and sometimes directly into estuarine Lagoons.

This used oil is responsible for almost a third of the sources of oil to the oceans and thus represents a significant source that requires greater attention than it hitherto receives. Besides, some of the ecological hazards posed by waste automotive crank-case oil are similar to those of refined products: In some toxicity studies, it has been reported that some refined petroleum products and this waste oil had similar magnitudes of toxicities (Oyewo and Ajao, Unpublished Research Reports). More details on this component including the potential for job creation are provided in the section on project components.

1.1.6 Historical Perspectives:

There are few systematic and dedicated studies on the impact of marine pollution, with a focus on oil spillage. Most of what is presently known derives from sporadic studies especially those carried out in the wake of disasters and those by independent scientists. There is also a good reservoir of information in various EIA reports lodged by oil companies in fulfilling mandatory demands of the regulatory authorities. Based on all available sources, it is known that impacts range from tainting to chronic effects and in some cases, outright mortality. Other associated problems include impairment of reproductive success and interference with chemical communication which may be vital for some critical life functions. The resultant ecological disequilibrium is rather consequential: According to Constanza (1992), for an ecosystem to be healthy and sustainable, it must among other things maintain its internal structure and organization and must be resistant to external stress over time and space scales relevant to the environment. This is particularly true for mangroves and other sensitive wetland ecosystems that are usually impacted in the event of a spill. Ground water contamination is also particularly noteworthy because of its implication for human health.

It is clearly desirable to carry out the type of activity in this proposal so that negative impacts can be minimised while managing the industry within a sustainable framework.

The essence of the foregoing is to give further insight into the potential impacts of spills against a background of the enormous resources that are at risk

1.1.7 Available Mechanisms for management:

The participating countries already have institutional frameworks for oil pollution management. In Nigeria, overall responsibility for oil pollution control rests with the Ministry of Environment (FMEnv.) while direct responsibility is delegated to the Department of Petroleum Resources (DPR). Thus, present mechanisms available for management include in-house management measures of prospecting companies which are multi-national and guided by regulations of the parent body, guidelines provided by the DPR and FMEnv. and provisions of international conventions. The Ministry of Environment is also responsible for the EIA Decree.

Local regulations state that containment and recovery should be the preferred option with the use of dispersants only permitted offshore. Nigeria relies on pollution clean-up resources provided by the oil industry and very little is maintained by government (ITOPF)

In Cote d' Ivoire, the Centre Ivoirien Anti-Pollution (CIAPOL) is the responsible authority for marine pollution control. Although an official policy is not known, there are indications that mechanical containment is the preferred option. Operators of the refinery and terminal at Abidjan has a stockpile of pollution control equipment which includes some boom, skimmers and temporary storage (ITOPF). The government through CIAPOL is better equipped for pollution control.

In Ghana, the competent authority comprises the Environmental Protection agency and The Ministry of Transport. Containment and recovery are the preferred options for spill response. Mechanical and agricultural equipment suitable for beach cleaning are available commercially while government has very little dedicated oil spill response equipment (ITOPF).

In Kenya, the Kenya Port Authority (KPA) has responsibility for controlling pollution in Kenyan waters. In the past, dispersants have been the main means of response because unfavourable local conditions are not conducive to the use of mechanical recovery and containment. The oil industry holds limited stocks of dispersants and sorbent while government owns specialised equipment located at Mombasa Port (ITOPF).

In South Africa, oil pollution prevention and response is divided between the Department of Environmental Affairs & Tourism (DEAT) and the National Department of Transport (NDOT). Dispersants have historically been relied upon for spill combat at Sea with present day policies reflecting a more cautious approach. Booms and skimmers are utilised in sheltered port and coastal areas. Both government and private entrepreneurs stock considerable amount of pollution control equipment (ITOPF).

In addition, all the participating countries have a three-tier contingency plan in different stages of development (ITOPF). In the case of South Africa, it is developed and under revision to include spills of chemicals. It is also developed in Cote d' Ivoire and Kenya while it has only been prepared in Ghana and Nigeria. In most cases, the essential elements of the plan include the capacity of an oil company to be able to deal with minor spills, a co-operative arrangement for companies to deal with spills beyond the capability of individual companies and a national response plan for major spills. The Nigerian Plan which is fairly representative is presented as Annexe II to this proposal.

It is note worthy that within existing plans, some weaknesses have already been identified. For example, it has been recognised that there should be a mechanism for ensuring the state of preparedness and the adequacy of the various response measures at all times. According to Oyekan, (1997), other germane considerations and additional features that need to be accommodated in the plan include:

- Mechanisms for developing and maintaining a routine surveillance system for early detection and reporting of oil spills.
- Making serious efforts to recover and reprocess spilled oil, rather than resorting to the use of chemical dispersants as first option;
- Making adequate provisions for storage and disposal of collected oil and debris;
- Preparation of Environmental Sensitivity Index (ESI) maps of the concessions or areas of operation, and integration of such maps into the companies' plans:
- Development and Implementation of appropriate monitoring programmes to assess the recovery of polluted environments, and the effectiveness of clean-up methods.
- Ensuring regular maintenance of equipment and conducting periodic real life exercises to establish their workability and quick activation in time of need.
- The issue of proper disposal of contaminants and that of spills sites' restoration
- Mechanisms for good record keeping, settlements of claims where necessary as well as appropriate public relations.
- Due cognisance of Trans-boundary issues.

According to the ITOPF website, Cote d'Ivoire has no official response policy for spills
It is clearly desirable to have one.

Of all the participating countries in Phase I, only Nigeria named oil spill as a high priority issue on which a Causal chain analysis was carried out. Identified Sectoral Pressures and underlying root causes for oil spills included; lack of adequate expertise, inadequate legislation, ineffective enforcement of legislation, and inadequate opportunities for survival.

Also during phase I, although Cote d'Ivoire did not carry out any Causal Chain Analysis for spills, it recognised technical assistance as necessary in measures to minimise the degradation of the environment

Perhaps the most important implication of the foregoing is the fact that extant national management measures are complementary with this proposal.

1.1.8 Land Degradation and Displacements:

The social impacts of oil exploration and exploitation include the fact that some sites have been degraded, greatly reduced in value and unsuitable for normal uses except they are restored. In the past, spills have also necessitated the complete resettlement of some communities. Loss of agricultural land for example translates into loss of livelihood for farmers while the psychological and social problems associated with displacements include loss of ancestral homes, familiar surroundings, religious and other cultural artefacts (NDES, 1997).

1.1.9 Community/Oil Company Relationship

In the only country which carried out a causal chain analysis on oil spill during phase I, sabotage was recorded as an immediate cause in addition to accidents and mechanical failure. Sabotage arises from the perception of a certain class of society that sees itself as disadvantaged or marginalised. If a community in

which an oil company carries out its operations can be driven to sabotage the facilities of the same company, the relationship that should exist between both parties is not being properly managed. Insufficient rapport between both can only result in mutual mistrust, suspicion and frustration.

Oil spill management strategies should therefore have participatory components which will involve joint initiatives between the oil companies and their host communities.

1.2 Justification:

The resources in the region's coastal area and the associated livelihood and other benefits are enormous and need to be protected. This fact is recognised in all participating countries. Furthermore, the necessary legal bases for necessary action already exists in a number of national legislations, UNCLOS III and the Abidjan and Nairobi Conventions as well as their protocols. Besides, past incidents of negative impacts of oil spills which resulted in severe impacts clearly demonstrate the need for action. It is also noteworthy that several activities envisaged in this proposal have already been identified as national and regional priorities.

For example, in a study commissioned by UNESCO-IOC/UNIDO/UNEP/IMO, one principal finding is the absence of adequate reception facilities in the major ports/Harbours in Benin, Cameroon, Cote d'Ivoire, Ghana, Nigeria and Togo (Ben Owusu – Mensah). The component of this proposal on the provision of Port Reception Facilities will address this and related issues. In terms of ecological and other impacts, some Nigerian cases may well exemplify the regional situation. Some have been mentioned in the Background section.

One of the best documented spill incidents is the Funiwa -5 spill of 1980. Recorded impacts included; oiling of a stretch of shore, defoliation of Mangrove seedlings, death of mangroves, death and or tainting of crabs, periwinkles, juvenile and adult fish. There was also extensive sediment contamination. The above account has gross ecological consequences: Mangrove communities serve as refuges, breeding and nursery grounds for commercially important fish species. Tainting of sea-foods also represents loss of livelihood for local communities who depend on the sales of their catches for livelihood. Spills have also resulted in community violence and in some cases, there is a correlation between communal disturbances and spill-induced sabotage (Okoko, 1994).

In South Africa, some spill incidents have resulted in oiling of some beaches and severely affected large breeding colonies of birds (ITOPF). This is a threat to both Tourism and bio-diversity.

In Kenya, the spilling of fuel oil into a mangrove creek in 1998 may have had effects similar to those described for the Nigerian situation. Thus, it must have constituted a negative impact to Fisheries.

In addition to the foregoing, many sensitive and fragile coastal ecosystems are at risk from oil spills. There are also fragile wetland systems in Nigeria and Ghana. Furthermore, Sea grasses and reef systems of Kenya and South Africa for example are inshore habitats that support fishing activities and tourism. They also represent areas of natural beauty and havens of bio-diversity. Coral reefs are not just some of the most valuable and spectacular places on earth, they provide food and livelihoods for millions of people, help in dampening tropical storms, support rich communities of marine life that rival rain forests and contains species with potential medicinal properties. These positive attributes will be lost to mankind if the values of these systems are reduced or destroyed by oil spillage.

Thus, there are immense ecological and socio-economic benefits of regional and global significance in preventing damage to such vital ecosystems.

This points to a need for preparedness since spills can occur at any stage in the exploration, exploitation and distribution of crude or refined products, as well as during normal shipping activities. In terms of distribution, is useful to remember that many sub-Saharan countries are subtended by oil tanker routes (Figure 1.)

It is also noteworthy that principal stakeholders have made bold attempts at addressing associated problems. As previously mentioned, governments in all participating countries have departments that regulate oil industry activities and deal with oil pollution matters. These countries also have contingency plans that have

either been proposed or developed. The oil companies on their part have operational guidelines for minimising spills. Most are multi-national and obliged to follow universally applicable guidelines of the parent body. These guidelines are generally geared towards the maintenance, protection and enhancement of the general health of the environments in which the companies operate and the promotion of good relationship with the host communities. In Nigeria for example, many oil companies have community relations officers. In many communities, they have been responsible for the provision of social amenities like Schools, Hospitals and boreholes for potable water. The communities themselves also have different pressure groups to look after their interest. This is a further pointer to the complementarity of this proposal with existing national initiatives.

However, some common weaknesses which have already been identified in Phase I include inadequate technical expertise, capacity and data especially on socio-economic impacts. Because these issues are common, a regional approach to address them is a reasonable imperative as envisaged in this proposal. A regional approach will also facilitate data exchange, co-ordination, harmonisation of policies, technical co-operation and training.

Some commonalities identified during phase I (Integrated Problem Analyses) and the present stage are further reasons why a regional approach is expedient: The general lack of port reception facilities for example is a common problem. Similarly, the issue of the careless attitude to the disposal of automotive crankcase oil is common and should thus be addressed by a regional initiative. Besides, oil spills are no respecters of political boundaries and tanker/shipping routes transcend geographical boundaries. Hence, isolated initiatives may be futile.

A regional approach will also facilitate harmonization of existing policies and laws making exchange of expertise, capacity building, experiences and information sharing easier.

In general, the ecological and environmental benefits of proper management of spills include a healthier environment and a more conducive situation for economic activities in the coastal zone. A cleaner, healthier and more productive coastal environment will facilitate better fisheries, tourism and other livelihood issues. Compliance with local laws and global treaties which some components will engender will also establish the industry as a responsible entity within society while encouraging governments to meet legal and moral obligations.

2. Objectives and expected results:

The overall goal of the project is to maintain, protect and enhance the quality of the marine environment of Sub-Saharan Africa. The specific objectives are to ensure that:

- a. All countries and territories of the region develop and practice effective marine Pollution emergency response plans and capabilities in accordance with the Requirement of the OPRC 1990 and the OPRC-HNS Protocol, 2000. These should be linked into regional and sub-regional marine pollution response plans as advocated in the Emergency Protocols to the Abidjan and Nairobi Conventions as well as articles 207 to 211 of Section 5 of UNCLOS III.

The implementation of the conventions is facilitated through the gathering of baseline information, the identification and assessment of marine pollution problems and the development of appropriate remedial solutions.

- b. Operational discharges from shipping activities within the region are minimized, if not eliminated and are regulated by the appropriate international conventions (MARPOL 73/78) and the Jeddah and Nairobi Conventions and their related protocols). In this respect, the provision by the countries of adequate reception facilities within the region is of paramount importance;
- c. Waste automotive crank case oil is properly managed by appropriate collection and re-use initiatives.
- d. Sites already devastated by oil pollution are restored including the

socio-economic and other livelihood pursuits that the sites normally support.

- d. The implementation of other relevant instruments concerning marine pollution is facilitated, including those governing inland waterways vessels and non-convention craft, the ones dealing with liability and compensation for marine pollution, namely, the International Convention on the establishment of an International Fund for Compensation for Oil Pollution Damage (FUND), 1992 and the International Convention on Civil Liability for Oil Pollution Damage (CLC), 1992, as well as the International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties (INTERVENTION), 1969, the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC), 1972, and in general, the provisions of MARPOL 73/78.

Specific expected results include:

- Strengthened oil spill and waste management strategies at national and regional levels
- Compliance with national legislations and implementation of international conventions
- Development of appropriate human capacity for oil spill management
- Development of National and Regional Contingency Plans
- Establishment of Demonstration sites for spill remediation
- Capacity for modelling reliable oil spill trajectories
- Strategy for Waste oil reuse
- Prevention of the introduction of exotic species through ballast waters

The contingency measures which the project will also facilitate are meant to ensure that chances of subsequent degradation are minimised as a result of deliberate and appropriate plans and measures.

The expected results will be useful nationally and regionally since both national and regional interests revolve around ecological, environmental and economic considerations.

3. Project Components/Activities:

This proposal has been divided into four components to realise the set objectives:

Component 1 : Strengthening of national and regional marine pollution management capabilities, with an emphasis on oil spill contingency response and management.

This component aims at the development of national systems for marine pollution management, in particular oil spill preparedness, the enhancement of co-operation between the countries of the region through the development of regional/sub-regional contingency plans and related activities, the establishment of regional emergency response centers and the promotion of compliance with relevant international protocols.

These goals will be realized through the following activities:

Activity 1.1 High-level workshops for government policy makers and senior managers in the oil industry

Since promotion of awareness of the respective roles and responsibilities in the management of marine pollution, particularly oil spills in each of the countries is a key goal, the seminars will focus on:

The policy role of the administrator/senior manager;
The global implications of marine pollution, especially by oil;
The problems caused by oil pollution and its effect on the marine environment; and
The need for rapid decision-making and the interface with other countries and the international community.
The importance of good community relations policy

Activity 1.2 National training courses for Supervisors/On-Scene Commanders

It is proposed that there should be national training courses for supervisors and potential on scene commanders to be held in each of the countries of the region. The training course programme will be based on the IMO Level 2 model course and should include appropriate sessions on the response to chemical spills.

The objective of the national training courses will be to instruct those who may become actively involved in the response to marine pollution incidents in the practical elements of contingency planning and response techniques.

The training courses should also cover important related topics, such as dealing with the media, liability and compensation, record keeping and reporting requirements, and international co-operation. It is intended that the training course should be attended by officials in the public administration and managers in the ports and petroleum sector who could be expected to play an important role in preparing for, assisting or responding to marine pollution incidents in each country as on scene commanders or as team leaders/supervisors.

Activity 1.3 Assistance with the development/completion of National Contingency Plans and the acquisition of necessary baseline data

The development of national systems for responses to marine pollution, in particular oil spill response, is one of the key activities of this component and in accordance with the Abidjan and Nairobi conventions and the 2000 protocol to the OPRC, 90 convention. It is envisaged that all states in the region will have comprehensive and up-to-date national contingency plans (NCP).

It is also intended that these NCPs should be strengthened by the backing of appropriate legal systems in each of the states. It is also hoped that appropriate stockpiles of pre-positioned equipment will be in place or, at least, that the mechanisms for acquiring such equipment will have been approved. The whole activity is essentially an act of institutional capacity building. It is therefore envisaged that appropriate experts from outside the region will work alongside designated officials in each of the countries in order to bring their know-how and expertise to bear in the preparation of appropriate national systems.

It will also be essential for each country to establish an inter-ministerial national contingency planning Committee composed of representatives of the key and relevant government departments to ensure that the NCP becomes a nationally accepted and understood policy document by all concerned with marine pollution, in particular with oil spill preparedness and response.

The NCP should describe the policies and operational procedures for the response to marine pollution incidents.

Few countries in the region have environmental sensitivity maps, which would make their emergency response plans and pollution prevention strategies more efficient. As a marine pollution prevention strategy, the preparation of environmental sensitivity maps will therefore need to receive high priority. It will be equally important to establish a data bank for other relevant baseline information.

Activity 1.4 Assessment of the oil spill combating equipment needs in each of the countries

In addition to an effective national contingency plan for responding to marine oil spills, which defines the national policy and procedures and sets out the institutional arrangements and especially the responsibilities of different government departments, it is also essential to have “a minimum level of pre-positioned oil spill combating equipment, commensurate with the risk involved, and programmes for its use (article 6(2)(a) of the OPRC convention). Appropriate regulatory bodies must be adequately equipped.

Activity 1.5 Assistance in the preparation of appropriate national legal frameworks and Ratification/Implementation of the relevant global Conventions

It is suggested that this should focus on the following elements:

Compilation of a draft law for implementation of the NCP. In particular, this law should spell out the responsibilities of the competent national authority and of all government support agencies. It should also specify the obligations on the oil industry (terminal operators, coastal refineries and offshore production facilities) and on port authorities to establish tier one marine pollution emergency plans. The law should also impose reporting obligations and a requirement to provide an adequate level of oil spill combating equipment commensurate with the spill risk.

Despite the fact that most States of the region are not yet parties to the OPRC convention, the proposed legal framework implementing NCPs should also cover all the organizational and reporting procedures of the OPRC Convention, as well as implementing current obligations under the Abidjan and Nairobi conventions and UNCLOS III.

Another important component for enhancing national capability is the provision of assistance in the implementation of relevant IMO and other international conventions concerned with the prevention of marine pollution, oil spill preparedness and response, and civil liability and compensation.

As noted above, the OPRC Convention is the primary international treaty concerned with oil spill preparation, response and co-operation. However, this does not cover the complete picture. In order to reduce the likelihood of accidents occurring, and to provide the legal basis for national measures to prosecute offenders who deliberately discharge oil or other hazardous substances into the marine environment, it is also desirable for States in the region to ratify, implement in their national legislation and enforce other international conventions, notably MARPOL 73/78 and its six annexes, the 1992 Civil Liability Convention (CLC, 92) and the 1992 Fund Convention and others. It is expected that the implementation of the present project, which will be initially focused on oil spills, will contribute to the development of national capabilities, port infrastructure and public awareness and education, which are fundamental for complying with the provisions of all other international conventions dealing with marine pollution, thus facilitating their implementation.

Activity 1.6 Establishment of regional centers for marine pollution control, management and emergency response.

It was envisaged from the outset and is enshrined under the Emergency Protocols to the Abidjan and Nairobi Conventions that regional emergency centres should be established in the region. The objective of the centres is to strengthen the capacity of the countries of the region and to facilitate the co-operation between them in order to combat pollution by oil and other harmful substances in cases of marine emergencies. They are also intended to assist strengthen Contracting Parties' capabilities to combat pollution and to co-ordinate and facilitate information exchange, technical co-operation and training.

The centers shall be the major regional co-ordinating agencies and will, among others:

Strengthen the capacities of the contracting parties and facilitate co-operation among them in order to combat pollution by oil and other harmful substances in cases of marine emergencies;

Assist contracting parties, which so request, in the development of the their own national capabilities to combat pollution by oil and other harmful substances and to co-ordinate and facilitate information exchange, technological co-operation and training;

Collect and disseminate to the contracting parties information concerning Laws, regulations and information concerning appropriate authorities of the contracting parties and emergency contingency plans, information available to the contracting parties concerning methods, techniques and research relating to marine emergency responses and List of experts, equipment and materials available for marine emergency responses by the contracting parties.

Assist the contracting parties, as requested; in the preparation of laws and regulations concerning matters covered by the emergency protocols and in the establishment of appropriate authorities, the preparation of marine emergency contingency plans, the establishment of procedures under which personnel, equipment and materials involved in marine emergency responses may be expeditiously transported into, out of, and

through the territories of the contracting parties, the transmission to the contracting parties of reports concerning marine emergencies, promoting and developing training programmes for combating pollution and to co-ordinate training programmes for combating pollution and prepare comprehensive anti-pollution manuals.

Component 2 : Restoration and remediation of areas polluted by oil spillage:

Oil spillage of various magnitudes has occurred and still occurs due to environmentally unsustainable exploration and exploitation practices as well as distribution of crude and refined oil products. Large scale environmental spill-related degradation and pollution of different environmental matrices as well as destruction of associated natural resources have resulted in wanton destruction of several sites.

In some areas of the Niger Delta of Nigeria, the situation is exacerbated by severe socio-economic consequences that have made the local population to perceive the oil industry a curse rather than a blessing. This situation has elicited youth restiveness which still occurs in various scales. A programme to restore damaged sites may just assuage the local population while restoring ecological integrity in such areas. The programme has been broken into a number of activities for convenience and to facilitate execution:

Activity 2.1: Inventory of contaminated sites; Risk-based assessment of the sites and identification of target priority sites for clean-up /remediation

Essentially, this activity will involve the identification and prioritisation of sites suitable as models for restoration

Activity 2.2: Assessment of remediation options and selection appropriate and cost effective technology for intervention

Based on environmental, economic and other relevant considerations, appropriate technology for intervention will be identified

Activity 2.3: Application of selected restoration options including compensation issues for temporary loss of amenity where and when appropriate.

This activity will involve the actual restoration. In addition, affected amenities and livelihood support systems will be valued so that the cost of impacts/loss can be evaluated in monetary terms.

Component 3: Provision of port reception facilities:

The pollution of the high seas as a result of non-compliance with relevant laws and treaties is sometimes due to the absence of reception facilities at the ports.

Generally in the sub-region, port reception facilities are absent (owusu-Mensah, 1996). This probably explains, at least in part, the fact that ballast waters, Galley and other wastes are discharged into and pollute national and international waters. If reception facilities are provided, there should be no excuse for such sharp practices.

National governments also have obligations in respect of international treaties and protocols. MARPOL 73/78, to which most participating countries are signatories provides the international framework on how pollution from ships should be regulated and includes the issue of Port Reception facilities. Because of the absence of these facilities, countries in the region will be unable to fulfil their obligations under MARPOL as required by annexes I, II and V even when the convention is ratified.

The subject of the implementation of the MARPOL Convention is a major task which includes an evaluation of the present situation, cost requirements for the provision of the facility, a review of the procedures for the enforcement of the treaty and appropriate institutional capacity building.

Accordingly, this proposal envisages the following activities under this component:

Activity 3.1: Survey of existing approach for the management of ship-generated and municipal wastes in port towns and cities.

Recognising the overlap between municipal waste management, ship generated wastes and waste management within ports, this activity will among others, evaluate existing practices as a means of identifying appropriate areas for intervention

Activity 3.2: Evaluation of the magnitude of the problem of marine pollution traceable to the absence of reception facilities at the ports

In this activity, the magnitude of problems associated with absence of reception facilities at the ports will be evaluated as much as possible in quantitative terms.

Activity 3.3: Survey (Case Studies) on existing port reception facilities for ship-generated wastes and costs in other countries

This activity will be undertaken in other to take advantage of experiences in other countries and as a prelude to the provision of similar facilities in participating countries

Activity 3.4 Assistance in the preparation of appropriate national legal Frameworks and Ratification/Implementation of the MARPOL Treaty.

The action items envisaged here directly overlap those in 1.5. However, since different components may be individually financed, the most relevant treaty for this particular component is the MARPOL Treaty.

Activity 3.5 Provision of Port Reception Facilities

All activities under this component will culminate in the provision of Port Reception facilities at designated Ports/Harbours

Component 4: Assessment of used lubricating oils in the WACAF area and measures for their elimination:

Used lubricating oil from automobiles, buses, trucks, ships and aircraft etc constitute a major cause of marine pollution from land –based sources in the coastal and marine environment of the WACAF region. Specific information about used oil in the WACAF region is lacking.

According to the American Petroleum Institute waste crank case oil constitutes almost 30 % of the total oil that enters the marine environment. Over 100 million liters of used oil is generated in Nigeria alone annually. Instead of allowing the discharge of such large amounts into water bodies where they create problems, it is better to evolve appropriate strategies for managing this valuable resource. Recycling of used oil on a small scale will translate into job creation with the ancillary benefit of a cleaner environment.

Activities under this component are;

Activity 4.1 Inventory of types and sources of used oil from various sources

Under this activity, information on types, characteristics and volume of used oil from various sources will be acquired

Activity 4.2 Assessment of coastal and marine pollution from used oil

As a follow-up to 4.1 above, the ecological, socio-economic and other impacts of waste oil pollution will be evaluated.

Activity 4.3 Intense public awareness on the merits of using recycled waste oil

This activity will be undertaken so as to carry along the projected end-users to forestall non acceptance of new idea/product

Activity 4.4 Development/adoption of recycling strategies

It is envisaged that this will be done by re-refining.

4. Linkages with other Activities

Linkages to other national Activities:

There are several national, regional and global activities which address the issue of oil spills. Interestingly, many past and ongoing national and regional initiatives are complementary with many activities envisaged in this proposal. For example, the proposed contingency arrangement just described in section 1.3 and the EIA articles aforementioned are indications of the concern of governments in the region and thus, coherence with regional priorities.

The GIWA issues listed under the Section on Project Identifiers are also linked to the question of oil spills. There should be effective linkages with such activities for mutual benefit and to avoid duplication of efforts as much as possible.

There are other activities and projects with congruous objectives: For example, a few years ago, UNIDO had a programme on waste oil re-refining. There are other sub regional or global initiatives completed or ongoing from which the project can benefit and with which there are clear linkages: These include the COMARAF programme, WACAF I, II and III, GOG - LME Programme, GOOS Africa and the GIWA Guinea Current Programme.

There are also some national initiatives which are linked: for example, the establishment of the Niger Delta Development Commission in Nigeria is an attempt to have a body that can quickly address the issue of environmental degradation in the area. In Cote d'Ivoire, activities of Project Littoral as well as Projet Ivoirien Belge de Lutte Centre la Pollution Marine are complementary to some activities of this proposal. Similarly, Ghana and Kenya have complementary programmes by national companies such as The National Oil Haulage Companies and the Task Force on the Review of Maritime Legislation respectively.

The list of linkages also include; The Convention on biodiversity, Joint UNEP/IMO/IPIECA Oil Spill reduction Strategy, UNDP, WWF, WHO, GEF International Waters Portfolio, Convention on the prevention of Marine pollution by dumping of wastes and other matter (LC), 1992 and the International Oil Pollution Compensation Fund (IOPC Fund). There are of course, the Abidjan and Nairobi Conventions with clearly related goals and regional relevance. This proposal also has a clear linkage with the United Nations Law of the Sea Convention (UNCLOS III) especially articles 207 – 216 under Section 5. The Nairobi and Abidjan Conventions as well as UNCLOS actually impose moral and legal obligations on participating states and already provide the legal bases for the components and activities in this proposal. The IMO programme on ballast water is another clear linkage. It principally addresses the provision of port reception facilities which will allow ships discharge ballast water in an environmentally safe manner. Fortunately, considerable information is currently available on the IMO website which is complementary with information from other sources. The main problems with ballast water and associated sediment are oil pollution, human health hazard and the introduction of exotic species. The WHO is particularly concerned about the role of ballast water as medium for the spreading of epidemic disease bacteria. According to one of the guidelines in the

IMO document, there are appropriate guidelines to all ships carrying ballast water which provide for safe and effective procedures for ballast water management. By way of assistance, the IMO has joined forces with GEF, UNDP, member governments and the shipping industry to assist less industrialised countries to tackle the ballast water problem through the project referred to as the Global Ballast Water Problem or GloBallast. Incidentally, South Africa is the only sub-Saharan country to benefit from GloBallast. The essence of some detail on GloBallast is to highlight the global concern on the need for port reception facilities and the linkage of the African Process to similar initiatives.

The issue of trans-boundarity is particularly relevant for oil spills whose impacts may be felt outside the country from which they originate. Ocean currents and the associated meteorological forcing agents which influence spread are not limited by political boundaries. This makes regional co-operation and linkages between activities, groups and individuals a reasonable imperative. A recent spill in Eastern Nigeria was reportedly detected in the far west of the country and even in neighbouring countries west of Nigeria. Even if some of the claims are unconfirmed, they are indicative and strengthen the relevance of trans-boundary and regional considerations.

A special link will be established with the ongoing project implemented by GEF on “Western Indian Ocean Contingency Planning” in Seychelles and Mauritius, given the high degree of compatibility that exists between it and the present proposal.

5. Demonstrative value and Replicability

Sound management practices and preparedness to combat marine pollution, in particular oil spills, will minimise ecological and other damages that may otherwise occur. The project can also promote social harmony and political stability as the strives, restiveness and sabotage which sometimes accompany spill-related damages will be avoided.

Harmonisation and stockpile of equipment as well as established linkages will facilitate co-operation in situations when complementary efforts are needed

Some aspects of the proposal are amenable to replication: For example, all the components can be addressed as demonstration or pilot schemes in some locations and then duplicated elsewhere. Such aspects include the provision of Port Facilities, The restoration of degraded sites and the issue of waste oil re-cycling.

6. Risk and Sustainability

The success of the programme is too predicated on the assumption that donors will be sufficiently interested to fund most of the proposed components. If this assumption breaks down, project execution will be difficult.

The programme must also be structured and run in such a way that the impetus is sustained at all times. From experience, many such programmes in the past start with a lot of enthusiasm which often fizzle out with time. It is also important to involve policy makers (in addition to the scientists) at all times. In such a way, delays and bottlenecks due to information gaps, lack of adequate co-operation and perhaps insufficient interest will be avoided.

Also from experience, other risks are associated with insufficient awareness on the part of key players. It is important to promote the use of environmental friendly technology while formulating and enforcing appropriate regulations.

There should also be a mechanism to facilitate some form of national and sub-regional harmonisation so that complementary efforts can be deployed if and when the need arises.

In terms of sustainability, emphasis must be put on the development of appropriate human resources. In addition there must be contingency financial arrangements for the continuation of the projects after donor funds have run out. This may be done by setting some funds aside installmentally over time. Such funds may

be derived from gains of the project in cash or kind. It is noteworthy that the huge financial and socio-economic costs of ecological and other damages that usually accompany spills (when appropriate management or contingency arrangements are not in place) will be avoided. Besides, the concomitant promotion of environmental health is enormous in monetary terms and may translate into less expenditure on health, pollution control and improved economic productivity.

It is also noteworthy that components of this proposal are consistent with extant national priorities in some participating countries. Implementation of this proposal will strengthen such initiatives.

7. Stakeholder Participation:

As much as possible, all stakeholders should be involved right from the planning stages. This is the best way to ensure the needed commitment, dedication, support and understanding on the part of all players. Such stakeholders include:

Governmental/regulatory bodies:

The Ministry of Environment or Environmental Protection Agencies at the Apex tier. Others include the Ministries in charge of fisheries, Forestry, Urban and physical planning as well as information. Other relevant stakeholders include the Navy and the Air-force in the respective countries

Local Government Communities:

Local governments are very important as they are closest to the local communities who may be directly affected by spills. The community leaders are also important stakeholders

Scientists will be involved in any necessary studies to facilitate programme. Proper management of any environment is best carried out against a background of a thorough understanding of physical, chemical, biological and other characteristics.

NGOs:

All relevant NGOs. NGOs are sometimes best suited to act as liaison between oil companies and local coastal communities in their areas of operation.

8. Project Management and Implementation

An appropriate framework for effective project implementation will be set up. For component 1, the proposed regional center will be relatively strong compared with the national centers because of the former's pivotal and co-ordinating role. For the other components, there will be strong national and comparatively weaker sub-regional components as the activities are largely national based even if amenable to replication in the participating countries.

National project teams will comprise mainly experts in the relevant fields. There will of course be a central sub-regional co-ordinating committee for overall technical and scientific guidance, assurance of adherence to set time tables, uniformity of methods/comparability and any necessary cross contacts with relevant specialists within or without the region. The national team will also work out a regular and periodic mode of evaluation and act as project liaison with the sub-regional co-ordinating committee. At the national level, there will be yearly workshops to evaluate progress of work, disseminate any necessary information and to make any adjustments if necessary. At the sub-regional level, there will be a workshop mid-way through the project and another shortly before the project ends. The purpose will be fine tuning, opportunities for open appraisals so that any necessary interventions can be effected at the right time. National activities will be co-ordinated by the executing agencies which will also work out inter-agency co-ordination strategies where multiple agencies are involved. Sub-regional co-ordination will be based on the mutual consent of all participating countries.

9. Project Financing & Duration

The total amount of external sources of fund for all activities under the four components is estimated at US\$

24,680,000. There is an assumption that each activity will take place at one location in each of the participating countries. Hence, the amount indicated per activity in the summary table represents the estimate for five replicates i.e, one in each country. In situations where an activity will be carried out in multiple locations in a country, the cost will have to be adjusted accordingly. There are two exceptions: Activities 1.6 and 3.3 of components 1 and 3 respectively do not need any replication and are individually costed accordingly.

The estimate for in-country counterpart funding as indicated in the summary Table is based on the assumption of equal commitment and contribution by each participating country to the tune of 20% of the total cost. Thus, total in-kind estimate per activity is five times the amount suggested for each country. Total estimate for in-kind contribution of all participating country is US\$ US\$ 6,170,000 Thus the grand total estimate from all sources is US\$ 30,850,000. The position will be clearer with time when the interest and commitment of donors and national governments become more clearly defined.

Table 1. Component & Activity Financing (US\$)

Summary Table.

	External Source of Funds ¹			National Government		Total
	Source 1	Source 2	Source 2	Cash	In-kind*	
Component 1						
Activity 1.1	100,000					25,000
Activity 1.2	120,000					30,000
Activity 1.3	300,000					75,000
Activity 1.4	60,000					15,000
Activity 1.5	140,000					35,000
Activity 1.6	2,800,000					700,000
Component 2						
Activity 2.1	100,000					25,000
Activity 2.2	80,000					20,000
Activity 2.3	300,000					75,000
Component 3						
Activity 3.1	100,000					25,000
Activity 3.2	100,000					25,000
Activity 3.3	40,000					10,000
Activity 3.4	100,000					25,000
Activity 3.5	10,000,000					2,500,000
Component 4						
Activity 4.1	60,000					15,000
Activity 4.2	80,000					20,000
Activity 4.3	200,000					50,000
Activity 4.4	10,000,000					2,500,000
Total	24,680,000					6,170,000

*Assuming equal commitment and contribution by each participating country

10. Monitoring, Evaluation &Dissemination:

Administrative arrangements proposed for the project management and implementation have been described under item 8.

Evaluation and dissemination would be ensured using the following mechanisms:

¹ Insert one column for each proposed source of co-financing

There will be Workshops during which all stakeholders will discuss project content and scope, progress or lack of progress and ways of moving project forward.

Apex professional evaluation will be carried using appropriate experts possibly under the auspices of ACOPS.

Dissemination of the results at any desired stage could be done through News letters dedicated to the African process and also under ACOPS auspices. This avenue is strongly recommended because other publications may not necessarily target the right readership as far as the African Process is concerned.

The internet is also a useful tool for fast and widespread dissemination. This could be done using the ACOPS website or by having a website dedicated to the African process.

11. Work Plan and Timetable

Table 2 : Outline Work Plan and Timetable

Year ²	1				2				3				4				5			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Component 1																				
Activity 1.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Activity 1.2					X	X	X	X	X	X	X	X	X	X						
Activity 1.3							X	X	X	X	X	X	X	X	X	X	X	X	X	
Activity 1.4					X	X	X	X	X	X	X	X	X	X						
Activity 1.5							X	X	X	X	X	X	X	X	X	X				
Activity 1.6									X	X	X	X	X	X	X	X	X	X	X	
Component 2																				
Activity 2.1	X	X	X	X	X	X														
Activity 2.2					X	X	X	X	X	X	X	X								
Activity 2.3									X	X	X	X	X	X	X	X	X	X		
Component 3																				
Activity 3.1	X	X	X	X	X	X														
Activity 3.2			X	X	X	X	X	X	X	X										
Activity 3.3					X	X	X	X	X	X	X	X	X	X						
Activity 3.4				X	X	X	X	X	X	X	X	X	X	X	X					
Activity 3.5									X	X	X	X	X	X	X	X	X	X		
Component 4																				
Activity 4.1	X	X	X	X	X	X														
Activity 4.2				X	X	X	X	X	X	X	X									
Activity 4.3							X	X	X	X	X	X	X	X	X	X	X	X		
Activity 4.4			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Total																				

² Use as many columns as required to cover the entire period of project activities.

12. Log-frame Matrix

Use the standard Logical Framework Matrix as outlined below.

Summary	Objectively verifiable indicators	Means of Verification (Monitoring Focus)	Critical Assumptions and Risks
Overall goal of the intervention	<ul style="list-style-type: none"> -Present status of national and regional marine pollution and_oil spill management strategies. -Existence or lack of contingency Plans -Existence of participatory approaches involving all stakeholders 	<ul style="list-style-type: none"> -Available resources and mechanisms for marine pollution and_oil spill management -Track-record of performance/manageme nt of previous spills -Arrangement of necessary workshops and training courses -Capacity to implement international protocols 	<ul style="list-style-type: none"> -Heavy reliance on donors as main/sole financiers -Adequate political will is assumed -There should be a deliberate plan for Sustainability especially when donor funds are exhausted. It should not be assumed
Objectives of the relevant National Programs and the country, regional strategy	<ul style="list-style-type: none"> -More efficient marine pollution and oil spill management strategy -Meetings, -Reports -Provision of port reception facilities -Less nuisance from waste oil 	<ul style="list-style-type: none"> -Status of marine pollution and_oil spill management_capability -Manpower adequacy 	<ul style="list-style-type: none"> Availability of funds and an enabling political atmosphere -Continuity after exhaustion of donor funding
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"> -Sustainable management of oil industry activities -Adequate stock-pile of equipment and manpower to fight oil spills -Restoration of impacted sites 	<ul style="list-style-type: none"> Preparedness to tackle pollution incidents, in particular oil spillage (adequate equipment stock-pile and logistics) -Number of damaged sites restored -Existence of reception facilities -Ratification and implementation of international treaties 	<ul style="list-style-type: none"> -Adequate marine pollution and oil spill control materials -Human capacity/appropriate -Co-operation political will
Results to be delivered by project which will enable necessary changes (project outputs)	<ul style="list-style-type: none"> -More efficient marine pollution and oil spill management strategies -Port reception facilities -Waste oil collection and re-use facilities -Ratification and implementation of international treaties and protocols 	<ul style="list-style-type: none"> -Appropriate stock-pile of anti-pollution equipment, logistics and adequate human capacity -Number of damaged sites against number restored -Number of ports provided with reception facilities -Waste-oil collection and re-use facilities 	<ul style="list-style-type: none"> -Availability of Funds and logistics to execute necessary projects - Co-operation and political goodwill

<p>Components/Activities to be implemented in order to obtain planned results (Project components)</p>	<p>-Strengthening of marine pollution and oil spill management capabilities -Restoration of polluted sites -Provision of port reception facilities -Elimination of the problems associated with waste oils in the environment. -Ratification and implementation of international treaties</p>	<p>-Appropriate stock-pile of anti-pollution equipment, logistics and adequate human capacity -Number of damaged sites against number restored -Number of ports provided with reception facilities -Waste-oil collection and re-use facilities</p>	<p>Enabling environment for the execution of all components</p>
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Annexe 1. Potential Impacts of Oil Operations on the Environment

Oil Operations

Potential Impacts on the Environment

1. Exploration
 - a. Geophysical Investigation
 - Destruction of Vegetation and farmlands/ human settlement.
 - b. Geological Survey
 - Noise pollution and vibration from seismic settlers (Onshore) and on fisheries (Off-shore).
 - c. Drilling
 - Disturbance of flora habit.
 - Accumulation of toxic materials from drilling materials.
 - Oil pollution of the sea, beaches or land
 - Destruction of fisheries production
 - Destruction of breeding grounds for some marine fishes.
 - Alteration of the taste of fishes.
 - Killing of bottom dwellers.
 - Pollution of underground water (Wastes Pits)
2. Production/Processing
 - Water pollution from long-term cumulative effects of produced water, (with high salinity).
 - a. Flat Forms and Tank Farms
 - Water and land pollution from sanitary waste, used lubricating oil, solid waste
 - b. Gas Flaring
 - Air pollution from gas and oil processing, evaporation and flaring.
 - c. Gas Flaring
 - Production of heat
 - Kills vegetation around the heat area
 - Suppress the growth and flowering of some plants.
 - Diminish and reduce agricultural production.
 - Destruction of mangrove swamps and salt marsh.
3. Tanker
 - Aesthetic devaluation
 - Water pollution from ballast and tank washing
 - a. Loading, locations (onshore and offshore)
 - Deck drainage
 - Spillage during loading operation with all its accompany effects on the fauna and flora.
 - Destruction of seabed by dredging

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|---|--|
| 4. Storage Depots | Land pollution from efficient waste and solid wastes of chemical cans and drums. <ul style="list-style-type: none"> - Air pollution from storage tanks - Destruction of farmland for the establishment of storage depots. - Water pollution from effluent water. - Air pollution from gaseous fumes during loading. |
| 5. Transportation

(Pipeline Tankers) | Disruption of the seabed by dredging for pipeline installations. <ul style="list-style-type: none"> - Sedimentation along pipeline route - Water pollution from effects of leaks from fracturing or breaking of pipe caused by metal fatigue, trawlers and dredges, seafloor failures or sabotage. - Air pollution by transport tankers - Destruction of environmentally sensitive areas e.g lowlands where estuaries, wetlands and fields exists. |
| 6. Refinery | <ul style="list-style-type: none"> - Erosion and Flooding - Water pollution from effluents which contain wide range of organic and inorganic pollutants such as phenols, hydrogen sulphide, ammonia, oil and grease, phosphates, cyanide and toxic metals - Air pollution mainly oxides of nitrogen, carbon and sulphur e.g Nox Co2 and SOX |
| 1. Health Effects | - 1-6 above have adverse health effects. |
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Source: Anne Ene – Ita, quoted in John, 1992

Annexe II: Oil spill Contingency Plan for Nigeria
(Source: Oyekan, 1997):

Three categories of oil spills are recognised by the plan:

Minor spill -any discharge of oil of less than 25bbls in the inland waters, or less than 25bbls on land, coastal or offshore waters.

Medium spill -any discharge of oil between 25 and 250bbls into the inland water, or between 25 and 250bbls into on land coastal, or offshore waters.

Major spill – any spill greater than 250bbls into inland waters, or more than 250bbls on land, coastal or offshore waters.

It is however important to emphasize that these figures alone should be seen as guides and do not necessarily represent magnitudes of ecological and other impacts. They should therefore be used along with sensitivity indices of impacted environments as well as other relevant considerations before conclusions are drawn on the significance of impacts. For example, a minor spill going by the definition given above can have a devastating effect if it occurs in a very sensitive area.

Tier 1: Arrangement by individual companies for minor oil spills

Tier 2: Co-operative inter-company plans for medium oil spills

Tier 3: National contingency plan for major spills

At the first tier of response, specific equipment have been stock- piled by most exploration and producing companies for dealing with minor spills.

In acquiring the necessary stock-pile, each company takes into account its own situation especially in terms of its type of operation, topographical and other geographical peculiarities in its area of operation.

At the second tier of response, the different companies have an arrangement which pre supposes that each individual company is sufficiently equipped for carrying out the first level of response and in addition allowing for a situation where there can readily be an integration and exchange of materials and equipment to be able to effect the second level of response to tackle medium spills. Accordingly, oil exploration and producing companies formed the Clean Nigeria Associate (C.N.A.) in 1981. Under this arrangement, the different companies combined resources to acquire the capacity and capability to deal with situations beyond the capacity of individual companies.

The third tier of response to major spills is the activation of the National Oil Spill Contingency Plan which can adequately deal with major spills or disasters beyond the capacity of individual companies or their co-operative arrangement (CAN).

Within this plan, adequate communication, effective command structure, socio-economics, logistic and other relevant considerations have been taken into account. Most relevant arms of governmental bodies within and without the oil industry are involved with each handling areas for which her statutes and expertise make it best suited.

The National Plan also envisages co-operation with other countries bearing in mind that oil spills are no respecters of trans-national boundaries.