NATIONAL OIL SPILL CONTINGENCY PLAN

(NOSCP)

for

NIGERIA

REVISED 2013

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FOREWORD

The National Oil Spill Contingency Plan (NOSCP) is an important document that signals the Federal Government's determination to tackle oil spill incidents and the associated environmental problems in the Nigeria. The document was compiled by experienced individuals using the international standards presented by conventions such as OPRC 90 which Nigeria has ratified.

The NOSCP is an elaborate document in which all the human and material resources required to fight oil spill in Nigeria are highlighted. It has also established links with the various foreign organizations that can be called upon in cases where internal resources are inadequate to combat the magnitude of oil spill that has occurred.

The document clearly assigns roles to the relevant Government organisations such as the Police, Military, Ministry of Health, National Emergency Management Agency (NEMA) e.t.c in the event of emergency of oil spill management.

The establishment of National Oil Spill Detection and Response Agency (NOSDRA) as the lead Agency in oil spill management in Nigeria, shows the commitment of the Federal Government to implement the NOSCP vigorously. Such an institutional framework for the implementation of NOSCP is also part of the recommendations of the OPRC 90 which makes it possible for Nigeria to key into the West, Central and Southern Africa oil spill management system.

It is noteworthy that efforts to compile a NOSCP for Nigeria had started as far back as 1993 when a committee of stakeholders started work on the

document. Although the work was inconclusive, the data gathered were partly used to carry the assignment to its logical conclusion as we have it today.

NOSCP is a living document that is expected to remain evergreen. As such a periodic review of the document is quite imperative such that the information therein are updated to make it very effective and useful. For example, there must be constant updating of contact persons in various organisations as they move from their positions and locations from time to time. Other important information like Environmental Sensitivity Index (ESI) map, tidal information and the likes must also be updated accordingly. I give the assurance that the Federal Government is highly committed to keeping this important document evergreen to reflect its determination to protect the nation's environmental treasures for current and future generation of Nigerians.

Hajiya Hadiza Mailafia
Honourable Minister for Environment
August 2013

ACKNOWLEDGEMENT

It is proper to begin by acknowledging the special grace of Almighty God who through the installation of a new era of democratic good governance in Nigeria made it possible for this very important document to come into existence. It is especially commendable to note the support of the former Honourable Minister of Environment, Mr. John Odey, who provided the reliable baseline for the successful exercise leading to this reviewed version of the NOSCP in 2010.

His Excellence Chief Olusegun Obasanjo the former President Federal Republic of Nigeria and Chief (Dr) Imeh T. Okopido, the Former Honourable Minister of State for Environment deserve special mention for their contributions to the success of this document.

Most of the data and information contained in this document were obtained through the indefatigable efforts of an earlier committee in 1993 under the distinguished leadership of Dr. Jerry Nwankwo.

It is thus noteworthy to recognize and put on record that a high percentage of information and data contained in this earlier drafts NOSCP (1993) and (1997) were obtained during field visits by members of that Planning Committee and Writing Team to the oil producing areas in Nigeria and Overseas trips to several countries in Europe, North America, South America and South East Asia. The committee was immensely grateful to the Oil Producers' Trade Section (OPTS) of the Lagos Chamber of Commerce and Industry for not only sponsoring the overseas trips but also providing the funds for writing and publishing the document. Mention must also be made of the extra funding provided by Shell Petroleum Development Company

of Nigeria Limited (SPDC), Alba (Nigeria) Limited, the Nigerian National Petroleum Corporation (NNPC) and the Federal Government through the National Committee on Ecological Problems (NCEP).

Information and assistance received from the Ministry of Petroleum and Mineral Resources, the Clean Nigeria Associates (CNA), the Nigeria Institute of Oceanography and Marine Research, the Department of Meteorology and the Nigerian Navy, are also particularly appreciated.

Not to be overlooked are Dave Salt (Spill Consult), Andrew Nicoll (Oil Spill Response Limited - OSRL) and several staff of the International Maritime Organization (IMO), International Petroleum Industry Environmental Conservation Association (IPIECA), and the United States Environmental Protection Agency (USEPA) who through numerous discussions and consultations provided invaluable insights to the development of a practical guide for the management of oil spill incidents in our peculiar environment.

In addition to the then NOSCP Committee, the under listed Ministries, Departments and Organisations also contributed to the preparation of this document.

- The Ministry of Petroleum Resources – Focal part and Co-chairman
- The Nigerian Navy – Co-chairman
- The Nigeria Airforce
- The Nigeria Police
- National Emergency Management Agency
- The Nigeria Institute of Oceanography and Marine Research
- The Oil Producers' Trade Section of the Lagos Chamber of Commerce & Industry (OPTS)

- The Clean Nigeria Associates (CNA)
- The Department of Meteorology
- The Nigeria Ports Authority Plc
- Federal Department of Fisheries
- National Oil and Chemical Marketing Company (NOLCHEM)
- Nigerian Maritime Authority
- Federal Ministry of Agriculture, Water Resources and Rural Development

When reflecting on ascribing honour and recognition to deserving individuals and corporate organizations that have played significant roles in the production of this final draft document on NOSCP, the role of the members of the Sub-committee on the Oil Spill Response under the Chairmanship of Dr. V. A. Fodeke (FMEnv), co-chaired by Mr. Tony Ogbondu (SPDC) and the Secretary, Mr. D. A. Gidado (FMEnv) readily come to mind.

Furthermore, roles played by each member of this Sub-committee can be compared to the remarkable last lap of a relay race that is won, through the production of this important document. Other contributions by corporate members of OPTS were crucial in providing transportation, logistics as well as hosting local and international stakeholders' fora on NOSCP for Nigeria have not gone unnoticed.

Special thanks go both to local and international consultants who assisted in this exercise, notably the impressive and overwhelming contributions by Rear Admiral Stacey (rtd), U.K, Major General Adeyinka Adebayo (rtd), Prof. O. Osibanjo and Chief Emmanuel C. Odogwu.

Also, special thanks go to the Honourable Minister of Environment and the Director General/Chief Executive of NOSDRA, Sir Peter Idabor, for their support.

The NOSDRA In-house NOSCP Committee is gratefully acknowledged for its commitment to the continuous refinement of the NOSCP to meet up with international standards.

IN-HOUSE NOSCP COMMITTEE

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REVISION

This page should be completed and signed by the Honourable Minister of Environment after each review of the plan has been completed. A copy of it should be sent to each recipient of the revised pages of the plan (See ANNEX 14 - DISTRIBUTION LIST).

DATE	REVISED PAGE NUMBERS	NAME, TITLE AND SIGNATURE

ACRONYMS AND ABBREVIATIONS

1. AOSOC - Airborne Oil Spill Operations Command
2. API - American Petroleum Institute
3. APPA - African Petroleum Producers Association
4. CNA - Clean Nigeria Associates
5. DPR - Department of Petroleum Resources
6. EEZ - Exclusive Economic Zone
7. ESI - Environmental Sensitivity Index
8. ETD - Engineering and Technology Division (of the NNPC)
9. FGN - Federal Government of Nigeria
10. FME - Federal Ministry of Environment
11. GDP - Gross Domestic Product
12. GIS - Geographic Information System
13. GNP - Gross National Product
14. ICC - Incident Command System
15. IMO - International Maritime Organization
16. ITCZ - Inter-Tropical Convergence Zone
17. ITD - Inter-Tropical Discontinuity
18. LG - Local Government
19. LGA - Local Government Area
20. MOSOC - Marine Oil Spill Operations Command
21. MT - Motorized Tanker
22. NAPIMS - National Petroleum Investments and Management Services
23. NC - National Commander
24. NCCRC - National Command and Control Response Centre
25. NGO - Non-Governmental Organization
26. NIOMR - Nigerian Institution for Oceanography and Marine Research
27. NNPC - Nigerian National Petroleum Corporation
28. NOSCP - National Oil Spill Contingency Plan
29. NOSDRA - National Oil Spill Detection and Response Agency
30. NOSRGB - National Oil Spill Response Governing Board
31. NP Plc - Nigerian Ports Public Limited Company
32. OPEC - Organization of Petroleum Exporting Countries

33. OPRC - International Convention on Oil Pollution Preparedness, Response and Co-operation
34. OPTS - Oil Producers Trade Section (Lagos Chamber of Commerce)
35. OSC - On-Scene Commander
36. OSRL - Oil Spill Response Limited – Southampton
37. QIT - Qua Iboe Terminal
38. SBM - Single Buoy Mooring
39. UK - United Kingdom
40. ZC - Zonal Commander
41. ZCCRC - Zonal Command and Control Response Centre
42. ZCCU - Zonal Command and Control Unit
43. ZRO - Zonal Response Organization
44. ZOSRC - Zonal Oil Spill Response Committee
45. ZOSRO - Zonal Oil Spill Response Organization
46. ZOSRAC - Zonal Oil Spill Response Advisory Committee

DOCUMENT NOTE

For the purpose of the National Oil Spill Contingency Plan (NOSCP):

i. the National Commander shall be the Director General/Chief Executive Officer (NOSDRA);
ii. the Zonal Commander shall be the Zonal Director/Head (NOSDRA) of the zone within which the incident occurs;
iii. the On-Scene Commander shall be any officer authorized by NOSDRA at the time of the incident.

1.0 AUTHORITY TO ISSUE AND IMPLEMENT THE NATIONAL OIL SPILL CONTINGENCY PLAN (NOSCP)

1.1 By the statutory powers conferred on the Federal Ministry of Environment through the Minister of the Environment, this document, known as the National Oil Spill Contingency Plan (NOSCP), hereinafter refered to as the 'Plan', is hereby issued as a document for cost-effective response mechanism for oil spill incidents within the territories of the Federal Republic of Nigeria. The National Oil Spill Detection and Response Agency (NOSDRA) established by Act No. 15 of 2006 as a parastatal under the Federal Ministry of Environment, is the institutional framework for the implementation of the document and is the lead Agency for oil spill management in Nigeria.

1.2 This Plan which includes response at tiers 1, 2, and 3, takes effect from the date signed below and is binding on all operators in the exploration, exploitation, production, distribution, marketing, transportation, storage and handling of petroleum products. In operating this Plan, it is important to stress that high priority management should be given to preventive strategies to avoid spillages in the first place so that the need to activate this Plan would be minimized.

……	……	……..
The Honourable Minister	Signed	Date
Federal Ministry of Environment		
……	……	……..
The Director General, NOSDRA	Signed	Date

2.0 NATIONAL BACKGROUND

2.1 This Plan defines the role of Government in respect of its responsibility as the environmental conscience of the Nation regarding all spillages of oil, whether accidental or deliberate, from whatever source and of whatever size, which threaten the Nigerian environment.

2.2 Such oil pollution is most likely the consequence of petroleum activities, such as exploration, production, refining and transportation including marine vessels and pipelines and petroleum handling facilities, namely depots, pump stations, terminals, ports and jetties.

2.3 In order to mitigate the adverse effect of oil pollution arising from any spillages on the environment and the health of the people, the government recognizes three levels of oil spill contingency planning for the petroleum industry, namely:

(i) Company plans - Tier One

(ii) Cooperative plan – Tier Two

(iii) Government plan for major or disastrous oil spills – Tier Three

2.4 While the Tier One or company plan is mandatory for each producing and marketing company, Tier Two (the cooperative plan or Clean Nigeria Associates (CNA)), was formed by the producing companies to assist member companies in handling oil spillage cases that an individual company is unable to combat. The

Government plan, embodied in the National Plan, represents the Tier Three plan which provides for a response capability to major or disastrous oil pollution which is beyond the individual oil company's Tier One response, and the cooperative Tier Two response capabilities.

2.5 The National Plan, as a matter of government policy, integrates these three Tiers of contingency planning thereby providing the necessary organizational structure, command and control, communication network and information service to ensure that Government can be kept fully informed of any spill occurrence, monitor the spill response and intervene when required so as to cope with all spills which threaten the Nigerian environment.

2.6 Furthermore, the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990, which Nigeria has ratified focuses squarely on the responsibility of member states to establish a National system or plan for responding promptly and effectively to oil pollution incidents.

2.7 Finally, the National Plan will not only help in the effective combat of major oil pollution for the preservation of our environment, but also provide the required access to international co-operation in oil pollution preparedness and response.

3.0 THE THREAT - ASSESSMENT OF SPILL RISK

3.0.1 Petroleum activities span the length and breadth of Nigeria. The activities include seismic, exploration, production, storage, and transportation by ocean-going vessels and pipelines, and processing. The activities vary in intensity in different areas but, they are concentrated mainly in the Niger Delta, which is considered environmentally very sensitive to oil spills in view of the complexity of its ecological setting and endowment. All of the crude petroleum is transported via pipelines to storage depots/terminals within the Niger Delta and areas contiguous to it. There are seven terminals out of which five are located along the coastline. These include the Bonny, Forcados, Qua Iboe, Escravos, and Brass terminals. The other two are Oloibiri and Antan terminals, both of which are located off the shoreline – on the Atlantic Ocean. Each of these seven terminals has one or more loading points (single buoy moorings – SBMs) where large capacity ocean-going vessels moor to load.

3.0.2 The nominal storage capacities of these terminals are as follows:

Forcados	5,700,000.00	barrels
Brass	3,258,000.00	"
Bonga FPSO	1,850,000.00	"
Sea Eagle FPSO	1,400,000.00	"
Bonny Terminal	7,500,000.00	"
Escravos	3,600,000.00	"
Qua Iboe Terminal (QIT)	6,457,000.00	" (Crude Oil)
Qua Iboe Terminal (QIT)	1,956,000.00	" (Condensate)

*Oloibiri	2,000,000.00	"
*Antan	1,700,000.00	"
Gulf of Guinea (Offshore)	1,200,000.00	"
Yoyo FPSO	2,000,000.00	"
Erha FPSO	2,200,000.00	"

**Floating storages located on the Atlantic Ocean*

3.0.3 The actual storage at any time in these terminals averages above 65%. On the average, between 65 to 100 or more vessels of average capacity of 750,000 barrels visit the shores of Nigeria to load crude petroleum in one month. The pipelines through which crude oil is transported from various gathering points to the respective terminals, and from the individual terminals to the SBMs sum up to several hundreds of kilometers in length, and criss-cross the maze of creeks and coastal areas of the Niger Delta. (See ANNEX 2 – CRUDE OIL AND PETROLEUM PRODUCT PIPELINE MAP OF NIGERIA).

3.0.4 There are about 1,665 producing wells and 616 wells capable of producing in Nigeria. Most of these wells are concentrated within the Niger Delta and the Contiguous area (including the coastal areas). Of the producing wells 1045 are located within the land/swamp area of the Delta while 620 are offshore. The risks that are associated with the facilities described above would primarily be oil spillage due to:

- Tank failure in any of the terminals.
- Rupture of major delivery lines.
- Tanker accident within the Nigerian waters.
- Oil well blowout.

- Marketing of refined products
- Human error
- Sabotage

3.0.5 The magnitude of any such spill would depend on the nature of the incident, but would certainly necessitate the activation of the National Plan.

3.1 Refineries and Depots

3.1.1 Two of the three Refineries (Warri Refinery, old and new Port Harcourt Refineries) are located in the Delta region or within the area contiguous to the Delta (Warri and Port Harcourt) and the third, in the hinterland (Kaduna). The refineries are supplied with crude oil through pipelines, the longest being the Escravos-Kaduna pipeline. From the refineries, refined products are distributed to all parts of the country by a network of pipelines and storage depots, (See ANNEX 2 and 3 – CRUDE OIL AND PETROLEUM PRODUCTS PIPELINES MAP OF NIGERIA as well as NATIONWIDE CRUDE OIL and PETROLEUM PRODUCTS TANKAGE PROFILES respectively).

3.1.2 In addition to this, a fleet of four vessels capable of holding one million metric tons of all grades of petroleum products is now stationed offshore within Nigerian territorial waters.

3.1.3 The risk of oil spillage exists therefore, at all areas where these activities are carried out, with the higher potentials in areas of concentrated activities.

3.2 Frequency and Anticipated Size of Spills

3.2.1 While the global frequency of very large spills is fortunately relatively low, the risks are ever present and the time, place and cause unpredictable. However, the threshold of risk must be higher at focal points of related activity and it is here that response capability should be focused.

3.2.2 There have been large scale spills due to tank failures, oil well blowouts, and pipeline and hose ruptures as well as third party interferences. These however, have been few and far between. Minor spills are more predominant as their frequency outnumbers those of the larger ones.

4.0 NATIONAL POLICY

4.1 The Government of the Federal Republic of Nigeria recognizes the need to put in place an effective and tested crisis management capability through the National Oil Spill Contingency Plan. This is in compliance with National objective and the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC 90 which Nigeria has ratified).

4.2 The overall goal of the National Policy on Environment is to achieve sustainable development through the following:

a) Securing for all Nigerians a quality of environment adequate for their health and well-being;

b) Conserving and using the natural resources for the benefit of the present and future generations;

c) Restoring, maintaining and enhancing the ecosystem and ecological processes essential for the preservation of biological diversity;

d) Raising public awareness and promoting understanding of the essential linkages between the environment and development, and;

e) Co-operating with other countries and international organizations to achieve (a) – (d) above and preventing transboundary environmental pollution.

4.3 In view of the above, the National Policy advocates that exploration and production activities should be carried out in an

environmentally sound manner with minimal disturbance to the natural environment where possible. Accordingly, sustainable exploitation strategies to be implemented nationally in the oil and gas sector will, amongst other things, seek to:

a) ensure the implementation of the National Oil Spill Contingency Plan;
b) prepare a National Plan of Action for Awareness Preparedness for Emergencies at the local Level;
c) conduct spill modelling for all offshore developmental projects to enable proactive response to emergencies;
d) carry out inventory of spill sites and conduct prompt clean-up;
e) periodically inspect and ensure prompt maintenance of facilities as a proactive measure for prevention of oil spill;
f) encourage all mineral exploitation operators to keep accurate records of crude oil and product spills as well as other accidents that impact environmental quality and report them promptly to the appropriate authorities;

4.4 OPRC 90 directs, amongst others, that:-

- Each party shall require that operations of offshore units under its jurisdiction have oil pollution emergency plans, which are coordinated with the national system established in accordance with article 6 and approved in accordance with procedures established by the competent national authority

- Each party shall require that authorities or operators in charge of such sea ports and oil handling facilities under its jurisdiction

as it deems appropriate have oil pollution emergency plans or similar arrangements which are coordinated with the national system established in accordance with article 6 and approved in accordance with procedures established by the competent national authority.

4.5 The strategy proposed for the implementation of the National Oil Spill Contingency Plan will describe the scope of the plan. This will contain:-

- The geographical coverage of the plan
- Anticipated Risk
- Hierarchy of Responsibilities
- Roles of Authorities (Government and Responsible Parties)

5.0 THE ROLE OF GOVERNMENT

5.1 This National Oil Spill Contingency Plan with its associated arrangements reflects the determination of Government to identify and to play its full and proper role in the increasing complex industrial and commercial activities involved in the development of Nigerian National Oil Assets.

5.2 The prime responsibility of Government in these activities is to ensure that the best is always expeditiously done to protect the national environment from damage, both short and long term, arising from improper practices and the effect of accidental spillages. The government is the custodian of the environment in Nigeria and this responsibility must always be held by government.

5.3 Accordingly, Government must be aware of all accidents and spillages in order that they may monitor the clean up and ensure that all is done that can sensibly be done. Government must also ensure that all oil companies have a proper plan in place and equipment and personnel available for speedy response either within their company or through a response co-operative. In the event of a major spill Government must be able to take charge and bring in additional equipment either from the national Tier 3 response organization or by international arrangement from outside the country.

5.4 The success of these arrangements is utterly dependent on there being a trusting and effective relationship maintained between Government and industry, encouraged at all levels by means of transparent management, frequent joint training and exercises and a unity of purpose embracing the commercial benefits of the marketing of oil and the need to ensure the minimum of damage to the Nigerian environment. This will always be a difficult balance in which government has the prime responsibility.

6.0 SCOPE AND COMPONENTS OF PLAN

6.1 Implementation of the National Plan

6.1.1 The National Oil Spill Detection and Response Agency (NOSDRA), is the institutional framework of the Federal Government of Nigeria responsible for the implementation of the National Oil Spill Contingency Plan (NOSCP) to ensure a safe, timely, effective and appropriate response to major or disastrous oil spill incidences in Nigeria.

6.2 Dimensions of the National Plan

6.2.1 Geographical Areas

The geographical area covered by the National Plan is the territory of the Federal Republic of Nigeria including the 200 nautical miles off the coast of the country i.e. the Exclusive Economic Zone (EEZ). In all cases of oil pollution within the territory, the National Plan will be activated into taking action, such as surveillance, reporting, alerting and other response activities. The geographical area covered by this plan is shown in the annotated map (ANNEX 4).

6.2.2 Petroleum Activities

The petroleum activities in Nigeria are concentrated in the Niger Delta and majority of accidental oil pollution is likely to occur in the ecologically sensitive environments of the Delta. Furthermore, there is a gradual expansion of seismic, exploration and production activities into other areas, such as the frontiers of the Chad Basin, the Anambra Basin, the Benin Basin, and the Benue Trough and into

the deep offshore areas of the Niger Delta. The activities of the petroleum industry that are potential sources of oil pollution include the upstream and downstream operations, such as, drilling and development activities, production and terminal operations, refining and petrochemical plants, blending plants, depots and retail outlets.

6.2.3 Also included are pipelines systems, ranging from the small flowlines to the biggest trunk lines that connect these operational facilities. Whilst most of oil spills arising from the above operations are small and can be handled at the local level by a company response, as the magnitude and severity of the spill increase from medium to major oil spill, the mechanism of combat efforts may escalate from cooperative or CNA response level to the National or even Regional/International response to a major spill. It is important to emphasize in this scope that the first and second levels of the contingency planning are part and parcel of the integrated National Plan. In other words, the National Plan is built on the maximum utilization of the available facilities and resources within the existing companies' and CNA.

6.3 Statutory Requirements and Relevant Agreements

6.3.1 Legal Authority

The authority for the issuance of this National Oil Spill Contingency Plan derives from:

- Petroleum Act No. 51, 1969 as amended. Section 8(1)(b) (iii)

- The Petroleum (Drilling and Production) Regulations, 1969, section 25.
- Government Administrative Directive (1981) for the Establishment of Three Levels of Oil Spill Contingency Plans (to effectively and promptly combat the various magnitude of pollution) namely; the Company plan, the Cooperative plan and the National Plan.
- Federal Executive Council Approval and Formation at its 17th Council Meeting of 6th October, 1988, of a National Committee comprising relevant ministries, departments and organizations for the Formulation of the National Oil Spill Contingency Plan.
- The Federal Environmental Protection Agency (FEPA) Act 58, 1988 (now repealed), section 22 & 23; and,
- International Convention on Oil Pollution Prevention, Preparedness, Response and Co-operation 1990 (OPRC 90)
- The National Policy on Environment which provides for the Establishment of a National Oil Spill Contingency Plan
- National Oil Spill Detection & Response Agency (NOSDRA) Establishment Act No. 15 of 2006.

6.4 Regional and International Cooperation

6.4.1 The Contingency Plan recognizes the need for cooperation among member states of the West African sub-region, especially our immediate neighbours in the Gulf of Guinea, for combating oil pollution in our contiguous waters. The plan supports IMO's strategy for the protection of the marine environment, and in particular will

seek to strengthen the capacity for national and regional action to **prevent, control, combat** and **mitigate marine pollution** and to promote technical cooperation. To this end, the Plan will also promote cooperation fully with other organizations within the United Nations and relevant international, regional and non-governmental organizations to ensure a coordinated approach to the problem and avoid wasteful duplication of efforts. Specifically this National Plan will request assistance such as advisory services, technical support and equipment in accordance with applicable bilateral and international agreements for the purpose of responding to an oil pollution incident. When the severity of such incident so justifies, the Government will ask the International Maritime Organization to assist in selecting sources of provisional financing of the costs of responding to the oil spill incident.

6.4.2 The Government could also take necessary legal or administrative measures to facilitate:

- The arrival and utilization in and departure from Nigeria of ships, aircraft and other modes of transport engaged in responding to an oil pollution incident or transporting personnel, cargoes, materials, and equipment required to deal with such an incident, and,
- The expeditious movement into, through, and out of Nigeria, of personnel, cargoes, materials and equipment.

6.4.3 Currently, Nigeria is a signatory to relevant International Agreements such as:

- ❖ 1969 International Convention on Civil Liability for Oil Pollution Damage.
- ❖ 1971 International Convention on the Establishment of International Fund for Compensation for Oil Pollution Damage.
- ❖ 1972 Convention on the Prevention of Marine Pollution by the Dumping of wastes and other matter (ratified in 1977).
- ❖ International Convention for the prevention of Pollution from ships, 1973, as modified by the protocol of 1978.
- ❖ Convention for cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (signed 23rd March, 1981).
- ❖ 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (signed March 1990).
- ❖ 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC).

6.4.4 Article 6 of OPRC 90 further states:

Each party within its capabilities either individually or through bilateral or multilateral cooperation and, as appropriate, in cooperation with the oil and shipping industries, Port Authorities and other relevant entities should establish:

(i) A minimum level of pre-positioned oil spill response equipment commensurate with the risk involved together with trained personnel for deploying and operating such equipment.

(ii) A programme of exercise for oil pollution response organization and the training of relevant personnel.

(iii) Detailed plans and communication capabilities for responding to an oil pollution incident.

(iv) A mechanism or arrangement to coordinate the response to an oil pollution incident.

6.4.5 Where and if applicable, actions taken pursuant to this plan shall conform to the appropriate provisions of international cooperation protocols in any oil spill incident. This plan will form the basis for the preparation and implementation of regional and sub-regional plans for combating inter-boundary oil spills.

6.5 Physical and Geographical Coverage

6.5.1 Geographical Setting

Nigeria is a country of great variety of landforms, with an area of about 923,768km^2. Its population is about 140 million people. Nigeria comprises of seven relief regions based on land units as common landform assemblages: the creeks and lagoons, the Niger Delta, the coastal plains, the river basin troughs, the inselberg landscapes, the Chad basin and the eastern highlands. For purposes of this Plan, only the creeks and lagoons, and the Niger Delta are briefly described, because a greater percentage of petroleum activities in Nigeria take place within and around these unique regions.

6.5.2 The Creeks and Lagoons

The coastline of Nigeria is relatively straight except for the broad indented delta region separating the eastern and western segments. From the coastline to about 10-km inland is a strip of recently deposited sands, broken by a succession of east-west trending lagoons and swamps.

6.5.3 Deepwater Operations

Nigeria has continued to experience rapid growth in oil and gas operations. Most of the oil and gas operations take place in the hinterland of the Niger Delta region and the shallow waters. In recent years however, oil activities have expanded to the deep waters. The Plan therefore takes cognizance of the associated oil pollution risk that may impact the Nigerian territorial waters and the West African Sub-regional boundaries.

6.5.4 The Niger Delta

The delta which is formed as a result of the depositional processes of the emptying of river Niger into the Atlantic Ocean in the Gulf of Guinea is a very important region in the world. Situated between latitude 3° 45´N and 7° 35´N, and within longitudinal limits from 5° E to 8° 50´ E the Niger Delta is a region with abundant natural resources, the most important of which is petroleum.

6.5.4.1 Regional Geography of the Niger Delta

Like the other areas in the region to the north of the equator, the climate of the Niger Delta is determined by the influence of the tropical maritime (mT) air mass, the tropical continental (cT) air mass and the equatorial easterlies. The mT originates from the southern high-pressure belt located off the Namibian coast and it acquires moisture over the Atlantic Ocean as south easterly but crossing the Equator turning to south-westerly winds. Onshore however, its influence is modified by the cold water upwelling along the coast. The dry cT air mass also originates from the high-pressure belt over the Libyan Desert and so picks up little or no moisture along its path across the Sahara. These two air masses mT and cT meet along an incline surface known as the Intertropical Discontinuity (ITD).

The equatorial easterly is a rather erratic, cool air mass which flows in the upper atmosphere along the ITD. It descends occasionally to actively undercut the (mT) or the (cT) air mass to produce either line squalls (in the rainy season) or dust devils (in the dry season). The former can be accompanied by very violent winds gusting up to 90km per hour for brief periods. Rain falls mostly when an area is overlain by (mT), becoming dry when overlain by the (cT) air mass.

Rainfall is by far the most important climatic factor influencing the physical environment in the Niger delta region. The annual rainfall amounts in the Niger Delta region varies in a south to north orientation from above 3000 mm along the shoreline to 1800-2000

mm in the hinterland. More the 50% of the variability in rainfall of Nigeria occurs within this region alone thereby indicating the natural diversity of the region. The highest amounts of rainfall are however experienced in July every year while January is usually the driest month. The annual temperature within the region is however less variable with almost the entire area experiencing 26 °C to 27 °C on the average except the extreme south-western portions from Calabar which experiences 25 °C to 26 °C average air temperature annually. The temperature range in the Niger Delta is however expansive with annual maximum temperature of as high as 32 °C to 34 °C and minimum temperature of as low as 22 °C to 24 °C annually.

The soils of the entire region are mostly undifferentiated ferrisols and lithosols with riverine hydromorhic soils along the channels of the major rivers of the area. However, little patches of deep porous brown ferrallitic soils and sandy materials are found in Akwa-Ibom while reddish-yellow gravely ferrallitic soils on crystalline acid rocks are also found in parts of Cross River.

The drainage and hydrology of the Niger Delta region is in fact one of the most extensive networks of streams and rivers in the world due to the numerous distributaries of the River Niger. The most prominent rivers of the region are however, the Osioma River, Ase River, Orashi River, Nun River, Kwa Iboe River, Cross River, and Calabar. In addition, there are notable creeks among the

numerous ones like, the Benin Creek, the Nikorogba Creek, the Apoi Creek, the Ikebiri Creek and the Seiviri Creek.

6.5.4.2 Regional Geology of the Niger Delta

The Gulf of Guinea is one of the most prolific hydrocarbon provinces of the world. Intensive exploration efforts over the last 35 years in and around the Niger Delta in particular has led to a succession of significant discoveries, notably the Bonga, Agbami/Ekoli and Akpo discoveries in Nigeria and Zafiro and Alba in Equatorial Guinea. However, the full potential of the continental slope and rise seaward of the shelf break is only recently becoming apparent, with a number of exploration programs having resulted in world-class discoveries being made in recent years.

The Niger Delta is a Paleocene to Recent, wave-dominated delta situated in the Gulf of Guinea. Following the Mesozoic rifting of the Atlantic, sedimentation began with Albian drift deposits. Sediments filled the Benue Trough and by Late Eocene time began to prograde across the existing continental slope into the deep sea. Continued seaward progradation since the Eocene has extended the continental margin to its present position.

Modern seismic data and improved models of sand distribution indicate that in places prospective acreage can extend up to 300 km from the present-day coastline of Nigeria. Extensive regional 2D and 3D multi-client seismic data shot by a number of seismic contractors provide a high quality regional dataset that has

enabled unprecedented insight into the tectono-stratigraphic evolution of the Niger Delta and especially the deep-water province. The total sedimentary prism, an area of some 140,000 km2, has a maximum stratigraphic thickness of about 12 km.

The stratigraphy of the Niger Delta is divided into three diachronous units of Eocene to Recent age that form a major regressive cycle. The uppermost unit, the Benin Formation, comprises continental/fluviatile and backswamp deposits up to 2500m thick. These are underlain by the Agbada Formation of paralic, brackish to marine, coastal and fluvio-marine deposits, organized into coarsening upwards 'offlap' cycles. The underlying Akata Formation, comprises up to 6500m of marine pro-delta clays. Shales of the Akata Formation are overpressured and have deformed in response to delta progradation. These shales facilitate regional decollement for updip extension and downdip compression. Shales of the Akata Formation constitute a world-class source rock. Deepwater turbidite sands also exist within this formation. This is diagrammatically shown in ANNEX 9 (THE STRATIGRAPHY OF THE NIGER DELTA).

Diapiric shale structures began forming by Late Miocene time in response to lateral shale withdrawal from beneath the advancing deltaic load, combined with compressional uplift and folding of pro-delta strata. During the Pliocene and Pleistocene time, these structures were buried by the prograding delta and extensional growth faulting commenced. Subsidence within the depobelts

ceased episodically, at which time alluvial sands advanced rapidly across the delta top, concurrent with a basinward shift in deposition and thereby creating seaward-stepping depocentres.

Extensive gravity tectonism has deformed sediments over the continental slope and the resulting folding, faulting and diapirism have created intraslope basins 10 to 25 km wide, filled with thick sequences of ponded sediments that represent a wide range of depositional processes. Submarine canyons cut across these deformed zones and give rise to aggradational channel/levee systems which are distributaries for large deep-sea fans. Transport and deposition of terrigenous sediments beyond the shelf have been accomplished mainly by turbidities and mass transport deposits (slumps, debris flows).

During periods of low sea-level, deltas migrated seaward to the shelf edge and large amounts of sediments were transported to the slope, rise and deep-sea fans by turbidity currents and related mass flows via submarine canyons. Turbidity flows were confined within deep levered channels on the upper and middle fan, but spread laterally outwards as sheet flows on the lower fan dispersing large amounts of coarse sediments across broad areas.

Zones of imbricate thrusts occur in the deep offshore Niger Delta. These compressive structures are typically situated seaward of the zone of shale structures on the upper slope separated by a

relatively undeformed zone which exhibits minor thrusting and shale swelling.

The deep water Niger Delta hydrocarbon province encompasses a wide range of syn-depositional structural styles and deep-water sedimentary facies. The region can be broadly separated into four domains. These extend from the zone of shale diapirism on the present-day upper slope, basinward to a zone of relatively minor structuration, a frontal toe-thrust zone, and a zone of frontal deformation on the present-day lower slope and continental rise. (ANNEX 10 depicts the structural elements of the Niger Delta geology).

6.5.4.3 Regional Geomorphology

The delta of the River Niger is not formed in direct relation to marine processes. It is rather formed as a result of subaerial fluvial landscape processes due to the river mouth where its waters empty into the sea. The formation is as a result of decrease in transporting power of the sediment-laden flow of the lower course of the River Niger as it dissects the landscape in numerous directions due to the physiographic condition of the area. This decrease in transporting power resulted in the sediment deposition as shoal during the Quaternary Age form forming coastal plain sands and alluvium deposits. The shoal results in the bifurcation of the River Niger into two distributary channels near Aboh from where the delta builds up increasing in width.

Levees are formed from the deposition of the coarser suspended sediments flanking the channels into which the shoals have subdivided the flow. The finer suspended sediment was also deposited on the flood basin and backswamp of the distributaries but a greater portion is carried seaward spreading out over the denser seawater to produce the extensive gently sloping submarine delta front in the Gulf of Guinea. Most of the characteristic features of a flood plain such as meander belts, swamps and associated levees are found in the deltaic plain of the Niger.

The change in gradient to 100 metres and below over the entire region is the marked break of gradient which results in the expansive swamp area and creeks with reduced standing water and wave action characteristic to deltaic fringe. Shallow bars of sand, silt and clay are deposited along the banks and the mouths of the distributaries with lagoons and mudflats forming another transitional zone between land and sea. In some parts of the Niger Delta, a line of sandy ridges or barrier lands form a discontinuous shoreline connecting the various distributary mouths.

To a large extent, the shape of a delta is determined by the complex interaction of river and seawater, especially their relative velocities, and the calibre of the materials brought down by the river. In the Niger Delta region, the influence of tides have created funnel shaped distributaries kept open and straight by strong tidal

scour and stabilized by the growth of mangrove vegetation which characterizes the creeks in the region.

From geomorphological point of view, the Niger Delta extends from Forcados in the west to the Bonny River in the east, a distance of about 350 km, and from the apex of the delta at Aboh to the coastline which is about 16 km. Most of the 10,000 km^2 of the delta is made up of swamps, with a few islands of solid red earth, trending north-south, which form the only firm dry land; the mean elevation of these islands is approximately 20 m. (See ANNEX 7 – TIDAL TABLES).

6.5.5 Climate

Nigeria enjoys a tropical climate with distinct wet and dry seasons. There is, however, a steady decrease from the coast towards the hinterland in the duration and intensity of the wet season. The wet and dry seasons are associated respectively with the prevalence of the moist maritime southwesterly monsoon winds from the Atlantic Ocean and the dry continental northeasterly harmattan winds from the Sahara Desert. The fluctuating boundary zone between these two air masses is sometimes called the Inter-Tropical Discontinuity (ITD) or the Inter-Tropical Convergence Zone (ITCZ). The sequence of weather types experienced at a given year is determined primarily by the location of that place relative to the fluctuating surface position of the ITD and ITCZ.

6.5.6 Rainfall

Rainfall in Nigeria is highest in coastal areas of Lagos, Ondo, Edo, Delta, Rivers and Akwa Ibom states where the annual rainfall ranges generally between 2,400mm and 3,200mm. The rainfall decreases progressively inland. Generally, the rainfall continues to decrease with increasing latitude and distance from the coast until about latitude 9°N. The pattern is broken thereafter on the Jos plateau where the average rainfall is between 1,200mm and 1,400mm, due to relief or orographic effects. Apart from these orographic effects the annual rainfall in Nigeria can be said to decrease progressively inland from the coastal area to the northern boundary areas of the country where the lowest rainfall of between 520mm and 650mm can be recorded. The rainy season in the country generally lasts from about March/April until October/November. The dry season lasts from November until March.

6.5.7 Temperature

The temperature distribution in Nigeria is varied with hottest months in the country being February in the southern areas (annual average figures; 24-28°C) March in the central areas and April in the northern areas. The highest mean monthly maximum temperatures are 33°C in February, 37°C in March and 40°C in April.

6.5.8 Vegetation

The main types of vegetation, which occur in Nigeria, are swamp forests, the extensive savanna and a narrow belt of Sahel

occupying the extreme north. (See *ANNEX 8 – VEGETATION MAP OF NIGERIA*).

6.5.9 Soils

The major soil types of Nigeria can be related to four primary factors: Climate, vegetation, lithology and topography. Climatic factors influence the rate and depth of weathering and soil formation, which generally decrease from the humid south to the subhumid north. The soil moisture regime, which is very important in agricultural productivity, is particularly highly correlated with the incidence of rainfall in different parts of the country.

The density of vegetation also conditions soil moisture. Generally, soils become more prone to desiccation towards the north, not only because of the less humid climate but also because of the scantier vegetation cover. With increasing desiccation, hard iron concentration and layers of iron and clay pans occur in the soil profiles. However, these features also occur in the south where deforestation by man has exposed the soil to isolation. The organic matter content of the soils, which is so important to their productivity and structural stability, varies with the nature and density of vegetation cover.

Within the broad ecological zone, the distribution of major soil types is largely related to the parent rock, which influences such properties as soil depth, texture and stoniness, moisture condition, nutrient status and the proportion of minerals prone to weathering.

At the local level, soil types are related to slope. Everywhere it is possible to recognize a sequence of soils known as a soil catena, related to local topography: in areas of smooth relief the upper slopes usually have sedentary, rather clayey, soils developed directly on the underlying parent rock, while lower slope soils are formed of hill wash materials and are thus more sandy and stony.

In summary it can be seen that the geographical conditions are diverse covering a wide range of ecological conditions which would require considerable flexibility in tackling large oil spills.

6.5.10 Sensitive Areas

The Niger Delta and the contiguous coastal and inland areas in which are concentrated most of the petroleum activities, are rich in agricultural resources – fish, farmlands, economic trees, water bodies used for various purposes, the sensitive ecosystem itself, etc. Moreover, there are several inhabited areas within the Delta. Consequently there is a high level of maritime economic activities – ports, movement of several ocean-going vessels. There are also the long stretches of beaches. In the hinterland, the crude and product-carrying pipes criss-cross farmlands, inland fresh water bodies, roads and inhabited areas. The storage depots are not necessarily sited in locations of low environmental sensitivity. The refinery that is located inland (the Kaduna refinery) is sited close to Rivers Rido and Romi into which could flow oil spills, effluent discharges and runoffs from the Refinery and Petrochemical Complex. The rivers flow into the Kaduna River, which is the source

of potable water for a number of states in the northern part of the country.

In the event of a spill from any of the petroleum handling facilities within the country, the resources described above and many more would be at high risk, especially if the livelihood of the inhabitants in the area depends on such natural resources. Due to the culture of subsistence farming and fishing all over the country, the local inhabitants can not but depend on their respective immediate environments. Any major spill therefore would devastate the very roots of the understructure upon which the inhabitants' livelihood is built.

6.5.11 Priorities for Protection

The tidal and non-tidal freshwater zones, the mangrove swamps, and the coastline have been identified as sensitive areas of the Delta and contiguous portions. These areas as well as parts of the hinterland through which pipelines cross require high priority protection especially as most of the oil fields and pipelines are within these zones. Other priorities for protection would derive from detailed Environmental Sensitivity Index Maps and Environmental Baseline studies/data. An existing ESI Map for Nigeria-Outer Coast is shown in the *ANNEX 11*.

7.0 KEY GOVERNMENT DEPARTMENTS AND ORGANIZATIONS

7.1 In the National Oil Spill Contingency Plan, the following Government Ministries and Agencies have been identified as vital in the roles they will be expected to play in the event of a major oil spill disaster.

The Federal Ministry of Environment
The Ministry of Petroleum Resources
The Ministry of Defence (The Army, The Navy, The Air Force)
Department of State Security (DSS)
The Ministry of Foreign Affairs
The Federal Ministry of Lands, Housing and Urban Development
The Federal Ministry of Transport
The Federal Ministry of Aviation
The Federal Ministry of Health
The Federal Ministry of Agriculture and Rural Development
The Federal Ministry of Water Resources
The Federal Ministry of Information and Communications
The Federal Ministry of Science and Technology
The Nigerian National Petroleum Corporation (NNPC)
Federal Fire Service
Nigerian Customs Service
Nigerian Immigration Service
Nigerian Security and Civil Defence Corps (NSCDC)
The Nigerian Institute of Oceanography and Marine Research
The Nigeria Police
The Nigerian Meteorological Agency
The National Emergency Management Agency (NEMA)

The Nigerian Ports Authority

The Nigerian Maritime Administration and Safety Agency (NIMASA)

The Oil Producers' Trade Section of the Lagos Chambers of Commerce (OPTS)

State and Local Governments

NGO's and Communities

The Nigerian Red Cross Society

Industrial Groups and Academic Organizations

8.0 ROLES OF KEY GOVERNMENT MINISTRIES, DEPARTMENTS AND AGENCIES

8.1 Federal Ministry of Environment

By the Executive Order that establishes FEDERAL MINISTRY OF ENVIRONMENT (FMEnv), the Federal Ministry of Environment (FMEnv) is charged with the responsibility of ensuring a clean environment throughout Nigeria. The Ministry is expected to protect Nigeria's environment against possible degradation by regulating the activities of industries in the country.

8.2 National Oil Spill Detection and Response Agency (NOSDRA)

NOSDRA is the lead agency for all matters relating to oil spills response management in Nigeria. As a parastatal under the Federal Ministry of Environment, NOSDRA shall in the event of a major or disastrous oil spill, in collaboration with other line Agencies and Responsible Parties:-

- Assess the extent of damage to the ecology by matching conditions following the spill against what existed before (reference baseline data and ESI maps).
- Undertake a post-spill impact assessment to determine the extent and intensity of damage and long term effects.
- Advise Government on possible effects on the health of the people and ensure that appropriate remedial action is taken for the restoration and compensation of the environment.
- Assist in mediating between affected communities and the spiller.

- ❖ Monitor the response effort during an emergency, with a view to ensuring full compliance with existing legislation on such matters.
- ❖ Assess any damage caused by the spill incident.
- ❖ Urgently process and grant approval for any request made to it by the spiller for the use of approved dispersant or the application of any other technology considered vital in ameliorating the effect of the spill.
- ❖ Advise and guide the response effort so as to ensure the protection of highly sensitive areas/habitats and the salvaging of endangered or threatened wild life.
- ❖ Monitor the clean-up operations to ensure full rehabilitation of the affected areas.
- ❖ As the Chairman of the National Oil Spill Response Committee shall provide up-to-date information on the spill response efforts.

8.3 The Nigerian National Petroleum Corporation

By equity participation in oil operations with her joint venture partners the NNPC absorbs a good proportion of the expenditure incurred by her operating partners including compensations and claims arising from damage caused by an oil disaster. In this regard the NNPC shall:

- ❖ Mobilize logistics and its internal resources to assist in combating the spill
- ❖ Assist in obtaining any outside resources that may be required to combat the spill.

8.4 Federal Fire Service

- ❖ Have the men of the Fire Service to mobilize to fight possible fire that may result from the spill.
- ❖ Organize the men of the fire department for general rescue operation
- ❖ Ensures standardization of fire station, fire engines, complimentary appliances and ancillary equipment in tier 3 prone areas of the country; and
- ❖ Ensures operational preparedness for oil spill fire disaster management through simulation and management in collaboration with Stakeholders like NOSDRA, NEMA, etc;

8.5 Nigerian Customs Service (NCS)

Shall :

- ❖ assist in the clearance of equipment and materials for oil spill management.

8.6 Nigerian Immigration Service (NIS)

Shall :

- ❖ Expedite the issuance of visas and other relevant documents for the entry of expatriate personnel for the purpose of oil spill response.
- ❖ Facilitate, where necessary, the conveyance of these persons from point of entry to point of incident
- ❖ Provide personnel from its Arm & Physical Combat Unit for additional assistance during emergency oil spill response

8.7 Nigerian Security and Civil Defence Corps (NSCDC)

Shall:

- Work with the Nigerian Army to provide additional Security
- assist in maintaining order and control unwanted crowd
- Shall ensure personnel safety through out the duration of the response exercise

8.8 Nigerian Institute for Oceanography and Marine Research (NIOMR)

- Assist with data for oil spill trajectory models for spillage in brackish and ocean waters.
- Monitor the extent of impact in the coastal and marine environment.
- Monitor the effectiveness of cleanup exercises and advise on least-damaging techniques for quick recovery of impacted areas.
- Upon commission, monitor the recovery rates of impacted areas and document for future use, the most acceptable methods for cleanup in each ecotype.
- Recommend rehabilitation/restoration methods for the recovery of impacted areas.
- Provide Technical/Scientific Support Services to the NOSDRA.

8.9 Federal Ministry of Lands, Housing and Urban Development

- Determination of appropriate site for resettlement of affected communities;

- ❖ Assist in the mobilization of human resources to evacuate the affected communities to safer grounds;
- ❖ Preparation of Development /layout plan to mitigate against impact of oil spillage;
- ❖ Assist in the construction of temporary to semi-permanent structures for the resettlement of victims;
- ❖ Undertake a comprehensive survey of the social , economic and physical impact of the affected communities

8.10 Federal Ministry of Health

The Ministry shall in the event of oil spill disaster:

- ❖ Set up medical outposts around the scene of the incident to provide medical treatment to the affected communities.
- ❖ Mobilize medical personnel, drugs and other relief items to check epidemic.
- ❖ Monitor the effect of the spill on the general health of the community.
- ❖ Observe for possible outbreak of new health conditions that might be attributable to the incidence of the oil spill especially health impacts on potable water supplies.
- ❖ Mobilize requirements in hospitals to respond to the emergency.

8.11 The Nigerian Ports Authority

Shall:-

- ❖ Mobilize all nearby port facilities to assist in the response effort.
- ❖ Provide barges and other storage facilities for recovered oil.
- ❖ Facilitate berthing for vessels involved in the spill combat.

8.12 The Nigerian Maritime Administration and Safety Agency

Shall:-

- Provide advice on the navigability of shipping lanes, creeks and other inland waterways
- Ensure that all Nigerian Flag ships maintain an insurance or other financial security to cover its liability for oil pollution damage in line with the requirement of Civil Liability Convention
- Ensure that non-Nigerian Flag ships calling Nigeria waters carry on board an evidence of insurance to cover its liability for oil pollution damage.
- Receive report of oil spill incident in the marine environment from ship master and others within 24 hours of incident.
- Investigate to ascertain the cause, determine the magnitude and extent of damage to the marine environment.
- Monitor clean up operations by spiller to ensure full rehabilitation of the affected marine environment areas and protection of the highly sensitive areas.
- Deploy response personnel and equipment to assist in the clean-up operation where necessary with other relevant government Agencies.
- Assist in search and rescue operation when necessary.
- Conduct post spill survey and restoration of the affected areas in collaboration with other relevant government Agencies.

- Monitor the response effort during an emergency with a view to ensuring full compliance with existing OPRC 90 Convention requirement.
- Provide situation report to relevant international organizations such as IMO etc.
- Undertake the coordination of compensation of victims of oil pollution damage from ships in line with IOPC Fund Convention.

8.13 The Federal Ministry of Information and Communications

Shall:-

- Provide up-to-date information about the situation and give an unbiased view of the response effort to avail the affected communities and the general public with a clear and true picture of Government's effort, and whatever is expected of them.
- Monitor the response activities.
- Work in co-operation with outside media organizations to provide accurate reporting of the incident to the immediate indigenes of the affected community, the nation and outside world.
- Assist in the setting up of communications centers around the scene of the spill.
- Assist with outside contacts with foreign based resource centers for possible assistance.
- Allocate special frequencies for use by the National and Zonal Command and Control Response Centres and the CNA.

8.14 Federal Ministry of Agriculture and Rural Development

Shall:-

- ❖ Provide agricultural implements and other inputs to settle fishermen who may have been put out of business by the pollution of fishing areas by oil.
- ❖ Provide agricultural implements and other inputs to settle farmers who may have been put out of business by the pollution of arable land by oil.

8.15 Federal Ministry of Water Resources

- ❖ Provide additional emergency water supply sources
- ❖ Ensure water quality control and sanitation

8.16 Nigerian Hydrological Services

Shall:-

- ❖ Provide bore holes for water supply
- ❖ Ensure efficient and sustainable management of available water resources

8.17 DEFENCE

8.17.1 THE ARMY: On full alert

- ❖ Evacuate victims of the spill to designated areas for settlement.
- ❖ Assist in the clean-up operation.
- ❖ Assist with communication support.
- ❖ Provide additional security back up.

- ❖ Assist in the construction of access roads

8.17.2 THE NAVY: On full alert

- ❖ Patrol the sea and coastline.
- ❖ Assist in providing vessels for oil recovery.
- ❖ Render assistance to vessels in distress.
- ❖ Assist with communication support.
- ❖ Assist in the recovery operation in the sea.
- ❖ Provide current and tidal tables.
- ❖ Evacuate victims.
- ❖ Convey stakeholders to oil spill sites

8.17.3 THE AIRFORCE: On full alert

- ❖ Make surveillance flights over the scene of the spill.
- ❖ Monitor the oil slick movement.
- ❖ Assist in approved dispersant application.
- ❖ Provide transportation to and from the scene.
- ❖ Assist with communication support.

8.17.4 THE NIGERIA POLICE: On full alert

- ❖ Keep order in the vicinity of the incident.
- ❖ Protect property and equipment at the scene.
- ❖ Protect workers from angry mobs.
- ❖ Assist with communication support.

8.18 Department of State Security (DSS)

Shall:

- ❖ Protect and defend the public against domestic threats
- ❖ Provide necessary intelligence to National Commander as may be required
- ❖ Ensure protection of response personnel
- ❖ Carry out any roles necessitated by evolving security threats in Nigeria including counter-terrorism and counter-insurgent.

8.19 Federal Ministry of Aviation

Shall:-

- ❖ Provide regularly, data on the prevailing weather conditions.
- ❖ Make predictions on weather changes.

8.20 Nigerian Civil Aviation Authority

Shall:-

- ❖ Facilitate clearance of aircrafts for oil spill response

8.21 Federal Ministry of Transport

Shall:-

- ❖ Provide rail and water transportation for personnel and equipment.

8.22 Federal Ministry of Foreign Affairs

- ❖ Shall assist in the provision of visas for foreign agencies and specialized group of persons that may be required to bring in assistance to Nigeria.

- ❖ Provide liaison services with foreign agencies in the event of technical and logistic support services.

8.23 National Emergency Management Agency (NEMA)

Shall :

- ❖ Organize search and rescue teams during spill response
- ❖ Mobilize human and equipment resources to evacuate affected human communities to safer grounds.
- ❖ perform its obligatory function of supply of food, relief materials and temporary shelter to needy persons
- ❖ liaise with relevant State(s) Agency (ies) to evacuate and resettle persons should the need arise.
- ❖ Work alongside NOSDRA in coordinating oil spill emergencies.

8.24 State and Local Governments

The State(s) and Local Governments whose territory (ies) an oil spill and associated incidents have occurred are encouraged or required to:

- ❖ Assign an office or agency to represent the State/LG on the zonal response team.
- ❖ Cooperate fully in all the activities during a response exercise.
- ❖ Assist in raising and training an ad hoc intervention team from within its area of jurisdiction.
- ❖ Include contingency planning for responses, consistent with this plan, and zonal plans, in all related emergency and disaster planning.

- ❖ Initiate public safety and community relations actions necessary to protect public health and welfare during an emergency.
- ❖ Assist in directing evacuation in accordance with any existing State/LG contingency procedures.

8.25 Oil Producers' Trade Section (OPTS)

Shall:-

- ❖ Provide all necessary logistics support services including equipment and specialist personnel for the response efforts.
- ❖ Assist in securing the services of international organizations like Oil Spill Response Limited (OSRL), Southampton U.K.

8.26 Non-Governmental Organizations (NGOs)

NGOs, industry groups, academic organizations and others are encouraged to offer their services in:-

9 Assisting in their respective ways to ensure effective response actions.

10 Conducting scientific researches alongside government groups to evolve and devise sustainable cleanup strategies and rehabilitation techniques.

11 Organizing, coordinating and ensuring safe use of volunteers in a response action, and actually identifying where these volunteers can best render services effectively.

9.0 THE TIERED RESPONSE SYSTEM

It is important that the internationally accepted definitions of oil spill categorization are clearly understood as they are essential in Tiered Response.

9.1 Tier 1

Operational type spills of volume between **0 – 25 barrels to inland waters** OR **0 – 250 barrels to land or coastal/ offshore waters** that may occur at or near a company's own facilities, as a consequence of its own activities. An individual company would typically and under OPRC is required to provide resources to response to this size of spill.

9.2 Tier 2

A larger spill of volume **25 - 250 barrels to inland waters** OR **250 – 2500 barrels to land or coastal/ offshore waters** in the vicinity of a company's facilities. Resources from another company, industry and possible government response agencies in the area can be called in on a mutual aid basis. The company will participate in local co-operative such as the CNA where each member pools their Tier 1 resources and has access to any equipment which has been jointly purchased by the cooperative.

9.3 Tier 3

This is a major spill, **greater than 250 barrels to inland waters** OR **above 2500 barrels to land or coastal/ offshore waters** where

substantial further resources will be required and support from a national (Tier 3) or international co-operative stock pile, like the Oil Spill Response Limited (OSRL), may be necessary. It is likely that such operation would be subject to government controls or even direction. It is important to recognize that a spill which could receive a Tier 3 response may be close to, or remote from, company facilities.

10.0 ORGANIZATIONAL STRUCTURE

10.1 This plan is formulated and established to detect, monitor and co-ordinate the response to all oil spills occurring within the Federal Republic of Nigeria. The Plan's Organizational Structure will be headed by the National Oil Spill Detection and Response Agency (NOSDRA).

10.2 This structure incorporates the concept of the Tiered Response System. Tier 1 response will be provided by individual operators, while the Tier 2, CNA response can be activated either at the request of the On-scene Commander or by the direction of a Zonal Commander depending on the circumstances of the spill situation. The Tier 3 NOSDRA Response will be activated by a directive from the National Commander. While normally such a Tier 3 activation would follow a request from a Zonal Commander, the initiative by the National Commander is not necessarily limited tothis case.

Figure 10.1

OVERVIEW OF

THE NATIONAL OIL SPILL CONTINGENCY PLAN (NOSCP)

ORGANIZATIONAL STRUCTURE

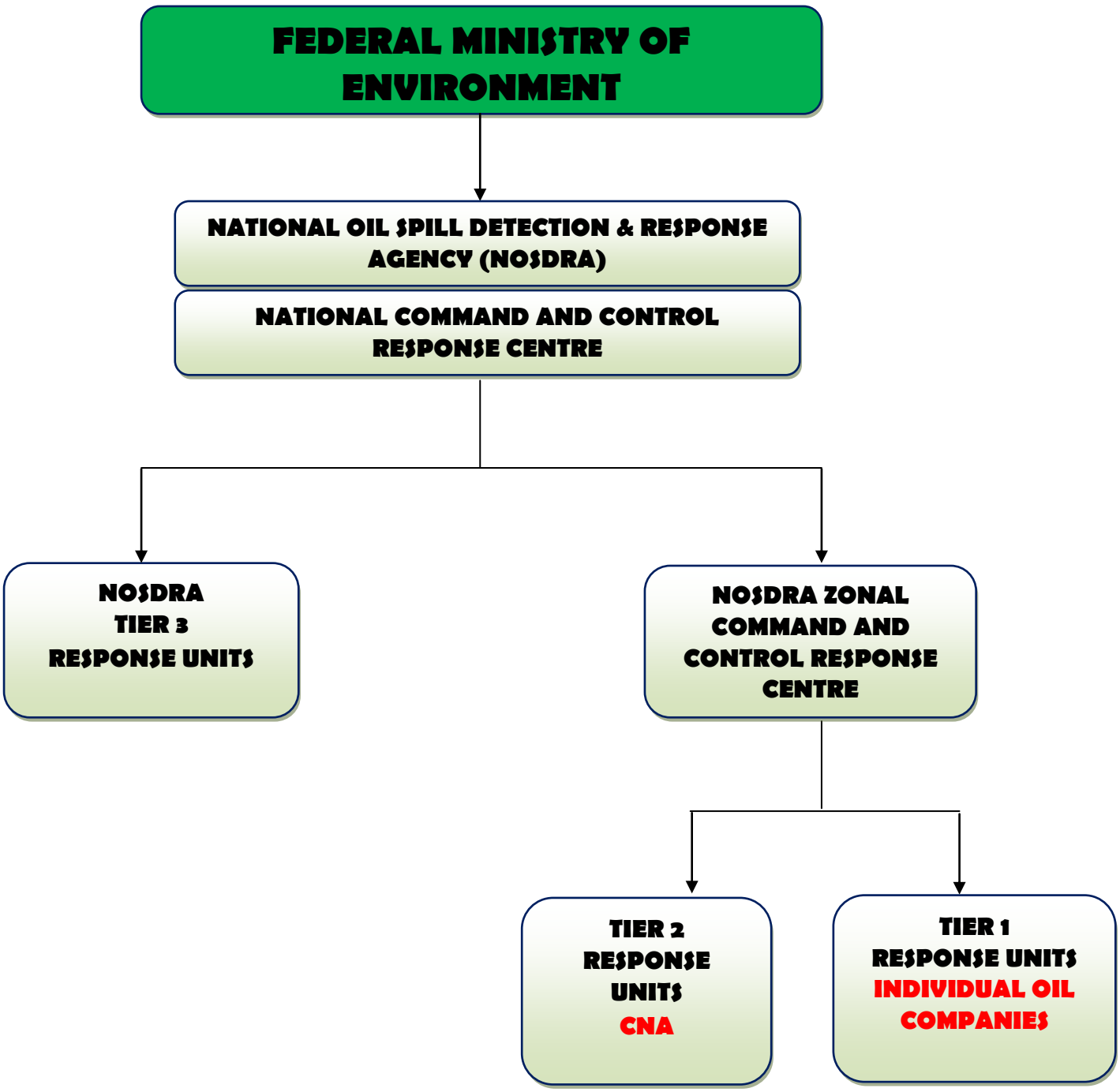
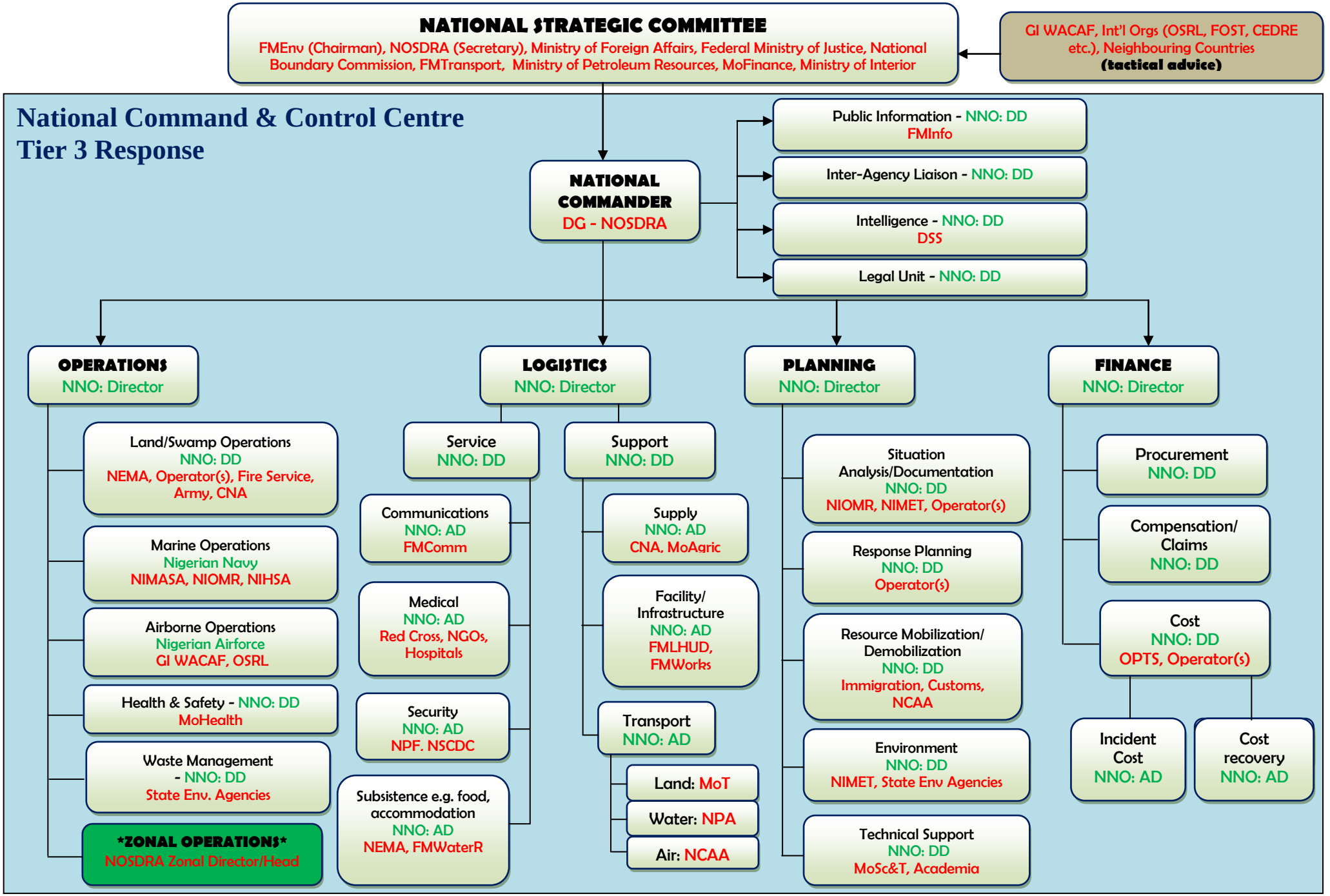


Figure 10.2 **OIL SPILL INCIDENT COMMAND SYSTEM (ICS) FOR NIGERIA**



11.0 REPORTING AND COMMUNICATION

11.1 All oil spills must be reported to NOSDRA using the oil spill reporting format as provided in Chapter 12. The Agency maintains contact details for the purpose of oil spill reporting as follows:

- ✓ call centre **08150272222**,
- ✓ email

  info@nosdra.gov.ng or

  oilspillalerts@nosdra.gov.ng

11.2 The first information regarding an oil spill may come from any source including the general public. This notification would initially be passed to the Tier 1 (company operator).

11.3 Without prejudice to the operator's decision, all spill incidents shall be reported to the nearest Zonal Command and Control Unit of NOSDRA. Depending on the nature and magnitude of the spill, the National Commander shall notify the Chairman of the National Oil Spill Response Committee who shall in consultation with the members of his committee, and alert a pre-determined oversea country for assistance if considered necessary. The National Commander of the National Oil Spill Response Committee shall also alert the Customs and Immigration Departments in order to facilitate the entry of oversea personnel, equipment and materials. A typical alerting procedure, shown in the following form , shall advise relevant department(s) for action and other departments for information only.

12.0 OIL SPILL REPORTING FORMAT

National Oil Spill Detection & Response Agency

FORM A

OIL SPILL/LEAK NOTIFICATION REPORT

This report must be submitted within 24 hours of Spill Incidence

1.GENERAL INFORMATION:				
i. Company Name:				
ii. Incident Details:- **iii. Spill Reference No:**	Date of Incidence (dd/mm/yy)	Time of Incidence (24h standard/daylight) hrs to hrs	Date of Observation (dd/mm/yy)	Time of Observation (24h standard/daylight) hrs to hrs
Survey By: Foot/Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy		
Level of Impact: ☐ No Impact ☐ Slight Impact ☐ Heavy Impact				
Estimated quantity spilled:				
2. Site Details				
i. Site Name: **OML:**				
ii. GPS FIELD POINTS Total Length _____m Length Surveyed_____ m Differential GPS Yes/No Spill Start Point GPS: EASTINGS _____meters NOTHINGS _____meters Spill End Point GPS: EASTINGS _____meters NOTHINGS _____meters				
iii. Site area ☐ Land Swamp ☐ Freshwater ☐ Mangrove ☐ Coastline ☐ Near Shore ☐ Offshore ☐ Others (Specify).....				
iv. Containment Measures in Place ☐ Boom ☐ Trenches ☐ Bund wall ☐ Sorbents ☐ Others (Specify).....				
v. Type of Contaminant ☐ Crude Oil ☐ Condensate ☐ Chemicals ☐ Refined Products ☐ Others (Specify).....				
vi. Facilty ☐ Pipeline ☐ Flow line ☐ Wellhead ☐ Manifold ☐ Flow Station ☐ Rig ☐ ☐ Storage Tank ☐ Compressor Plant Others(Specify).....				
vii. Properties at Risk ☐ Farmland Fish Pond ☐ Vegetation ☐ Fishing Net ☐ Surface water ☐ ☐ Venerable Objects Others (Specify).....				
3. SURVEY TEAM NO Name	Organization	Phone Numbers		

REPORTING OFFICER: .....

DESIGNATION: .....

SIGNATURE: ..... **DATE:** .....

**RBA Report must be submitted within 2 weeks of the Spill Incidence.*

National Oil Spill Detection & Response Agency

FORM B
RISK BASED ASSESSMENT OF OIL SPILL INCIDENCE (RBA)
Note: This report must be submitted within 2 weeks of Spill Incidence

Receptor Assessment

1.GENERAL INFORMATION:			
i. Company Name:			
ii. Date of Assessment:			
iii. Incident Details:	**Date of Incidence** (dd/mm/yy)	**Date spill was stopped**	**Method Used** Clamping Well Shut-in Valve Shut-in F/Station Shut down Others (specify).....

iv. Estimated quantity spilled:

v. Estimated quantity recovered:

vi. Cause of Spill

Corrosion Equipment Failure Third Party Interference Accident

Operational Error Others (specify).....

2. Site Details

viii. Site Name: **OML:**

ix. GPS FIELD POINTS Total Length _____m Length Surveyed _____m Differential GPS Yes/No
Spill Start Point GPS: EASTINGS _____meters NOTHINGS _____meters
Spill End Point GPS: EASTINGS _____meters NOTHINGS _____meters

x. Site area

Land Swamp Freshwater Mangrove Coastline Near Shore

Offshore Others (Specify).....

xi. Facilty

Pipeline Flowline Wellhead Manifold Flow Station
Rig Storage Tank Compressor Plant
Others(Specify).....

xii. Site Characterization

a. Sea Conditions

Calm Rough Not Applicable Low Tide High Tide

Current direction: .....
Swell Height: .....
Current Strength: .....

b. Weather Conditions

Bright Sunny Partly Cloudy Slight Rain Others (Specify).....

Temperature: ..... Wind Direction: .....

Wind Speed: ..... Relative Humidity: .....

vi. Visual Observation of Impacted area

(i)	Any oil sheen on water	Yes		N/A	
(ii)	Any oil sheen on water	Yes		N/A	
(iii)	Any oil sheen on water	Yes		N/A	
(iv)	Any oil sheen on water	Yes		N/A	
(v)	Any oil sheen on water	Yes		N/A	

Receptor	Pathway to Impacted Area(m^2)	Distance to Impacted Area(m^2)	Estimated Area of Impact Area(m^2)	Receptor Impacted (Yes/No)	Remarks
Farmland					
Fish Pond					
Vegetation					
Surface Water					
Ground Water					
Venerable Object					
Human Habitation					
Livestock					
Plantation					
Swamp					

vii. Any Casualties ☐ Yes ☐ No

If yes, give details……..

……

……

……

……

viii. Clean-up Program details

a. Method of clean up……

b. Time frame for clean-up……

ix. General Remarks

……

……

……

……

……

……

REPORTING OFFICER: .....

DESIGNATION: .....

SIGNATURE: ..... **DATE:** .....

**Clean-up program report must be submitted within 4 weeks of spill incidence.*

National Oil Spill Detection & Response Agency

FORM C

SITE CLEAN-UP/REMEDIATION ASSESSMENT REPORT

1. GENERAL INFORMATION:	
iv. Company Name:	
v. Date of Assessment:	

2. Site Details

xiii. Site Name: **OML:**

xiv. Date/Time of Incident:

xv. Area and Depth of Impact:

xvi. **GPS FIELD POINTS** Total Length _____m Length Surveyed _____m Differential GPS Yes/No

Spill Start Point GPS: EASTINGS _____meters NOTHINGS _____meters

Spill End Point GPS: EASTINGS _____meters NOTHINGS _____meters

xvii. **Contaminated Media**

☐ Vegetation ☐ Soil ☐ Sediment ☐ Inland Surface Water ☐ Brackish Swamp Surface Water

☐ Off shore Surface Water ☐ Underground Water ☐ Others (Specify)……..

3. (i) **Date Clean-up Programme Comenced:**

(ii) **Method of Clean-Up**

☐ Low Pressure Wash ☐ Mannual ☐ Mechanical ☐ Surface Wash ☐ Sorbents ☐ Chemical Disparsant

☐ Vacuum Skimming ☐ Others(Specify)……

(iii) Estimated quantity of oil / containment recovered……

(iv) **Method of Debris Disposal**

☐ Controled Inciniration ☐ Buried in lined pit ☐ Chemical Treatment ☐ Sanitary Landfill

☐ Land farming ☐ Others (Specify)……

4. Site Visual Observation

(i) **Nature of Soil**

☐ Show Heavy Impact ☐ Medium Impact ☐ Minimal Impact ☐ Others……

(ii) **Nature of Surface Water**

☐ Oil Sheen Present ☐ No Oil Sheen Present ☐ Others (Specify)……

(iii) **Nature of Vegetation**

☐ Withered ☐ Withering ☐ Luxuriant

(iv) Site Photos ☐ Yes ☐ No

(v) Date Site clean-up ended……

(vi) Sample collected after the clean-up program

☐ Soil ☐ Sediment ☐ Water ☐ Others (Specify)……

5. Result of Laboratory Analysis of Samples collected Pre/Post Remediation				
Parameter	**Sample**	**Test Method**	**Result**	
			Pre-Remd.	Post Remd.
TPH				
BTEX				
Trace Metals			Pre-Remd.	Post Remd.
Arsenic				
Barium				
Cadmium				
Chromium				
Copper				
Mercury				
Lead				
Nickel				
Zinc				
Total Dissolved				
Total suspended Solids				

6. Does Site require remediation ☐ Yes ☐ No

If yes,

(i) Date Site remediation commenced……

(ii) **Method of Remediation**

Land farming ☐ Biopile ☐ Bio venting ☐ Air Sparging ☐ Chemical Oxidation ☐

☐ Washing/Leading ☐ Phyto remediation ☐ Enhanced Natural Attenuation

☐ Monitored Enhanced Natural Attenuation ☐ Thermal Desorption ☐ Others (specify)…….

(iii) Is remediation method ☐ in situ or ☐ ex situ?

(iv) Details of remedial method (attached as an annex)

7. Details of rehabilitation plan for impacted population (attached as an annex)

8. Cost of Spill

c. Clean-up cost:-…….

d. Clean-up remediation:-……..

e. Cost of Repair works: …….

f. Naira loss due to oil Spilled: …….

g. Lost Man Hours: ……

Total……

9. Compensation paid, if any: .....

10. Method of Settlement of Claim

☐ Arbitration/Mediation ☐ Direct negotiation between Landlord and operator

☐ Court Settlement ☐ Not Applicable ☐ Others (specify)……

11. Date/Time of Visit by Regulations: .....

12. Remarks by any Third Party

……
……
……..

13. General Remarks

……
……
……
……
……
……

14. NOTE: Officials of NOSDRA must be present when samples are collected, and when analyses begin.

REPORTING OFFICER: .....

DESIGNATION: .....

SIGNATURE: ..... **DATE:** .....

13.0 ALERTING SYSTEM AND ACTIVATION

13.1 The National Plan will be considered activated upon the detection of any oil spill, regardless of its size. Following such detection, both the previously described report to government and an initial response from the appropriate Tier level will be required. Subsequently, depending upon the spill situation, a higher Tier participation may be required. It is important to stress that the success of any and all response actions will depend on all parties understanding and operating within a chain of command structure with clearly defined relationships and responsibilities.

14.0 CHAIN OF COMMAND

14.1 The chain of command embodied in the National Oil Spill Contingency Plan represents a Tiered Response Plan which provides for a response capability to major or disastrous oil pollution which is beyond the capabilities of individual oil company's first response. The chain of command, thus integrates the three Tiers of contingency planning thereby providing the necessary organizational structure, command and control, communication network and effective information service to ensure that government can be kept fully informed of all spill occurrences, monitor the spill response and intervene when required so as to cope with all spills which threaten the Nigerian environment.

14.2 National Oil Spill Detection and Response Agency (NOSDRA)

The National Oil Spill Detection and Response Agency (NOSDRA) is a parastatal under the Federal Ministry of Environment. It is responsible for surveillance to ensure compliance with environmental legislation in the Petroleum Sector, as well as to detect oil spills, and monitoring, surveillance and co-ordinating spill response activities throughout the Federal Republic of Nigeria. NOSDRA is headed by a Director General, appointed by the President on the recommendation of the Honourable Minister of Environment, and is based in the NOSDRA National Headquarters, Abuja. NOSDRA as a decentralized organization will delegates power to the Zonal Offices in the Incident Command System (ICS).

14.3 National Strategic Committee (NSC)

The National Strategic Committee (NSC) will be an advisory body to the National Commander. The members of this committee will be drawn from the following organizations: Federal Ministry of Environment (Chairman), NOSDRA (Secretary), Federal Ministry of Foreign Affairs, Federal Ministry of Justice, Federal Ministry of Transport, Ministry of Petroleum Resources, Ministry of Finance, Ministry of Interior and National Boundary Commission.

The NSC shall be responsible for supervising, monitoring and evaluating trans-boundary oil spill response operation including disseminating information to public and media and submitting any report to the Federal Executive Council. The Committee will play key role in development of any Memorandum of Understanding (MOU) with other neighbouring countries, which defines matters relating to oil spill pollution preparedness and response including ancillary concerns such as immigration formalities and custom clearance etc. In the event of either NOSCP or Regional Contingency Plan activation, the decision to terminate response /cleanup operations will be determined by the National Commander in consultation with NSC.

Furthermore, NSC will ensure that the interest of Nigeria, under the regional or other international frameworks that provide an operational mechanism for co-operation, mutual assistance and co-ordination of response efforts amongst neighbouring countries, is protected at all times. The committee will co-opt its members on a need basis particularly during trans-boundary response operations. NSC will draw support from the tactical team including international response organisations (OSRL, FOST, and CEDRE), GI WACAF etc).

14.4 National Oil Spill Response Advisory Committee (NOSRAC)

The National Oil Spill Response Advisory Committee (NOSRAC) will be an advisory body within NOSDRA. The members of this committee will be drawn from relevant ministries, departments, parastatals, operators etc. as outlined in the following Table. This Committee shall be a policy formulation body and as well shall act in an advisory capacity to the National Commander of NOSDRA in any situation in which the Organization is called upon for a response action.

14.5 National Command and Control Response Centre (NCCRC)

The National Command and Control Response Centre (NCCRC), shall be established as a report processing and response coordinating centre for all oil spill incidents, receiving all reports of oil spillages throughout the Federal Republic of Nigeria from the Zonal Command and Control Units of NOSDRA. NCCRC shall serve as the command and control centre for compliance monitoring of environmental legislation in the Petroleum Sector, surveillance for spill detection for monitoring and coordinating responses required in plan activations. It shall be equipped with crisis management system including but not limited to the following accessories for:

- Simulation Executive Network Control
- Visual Systems
- Performance Measurement Data Libraries
- Geographic Information Systems (GIS)
- Resources Data Base
- Environmental Models
- Incident Command System
- Equipment Modeling

- ❖ Cost Benefit Models
- ❖ Data Base Management Systems
- ❖ Early warning Spill Detection Buoys

In addition to written reports, special predesignated telephone and communication systems such as e-mail, radio signals, and fax e.t.c shall be maintained by NOSDRA for the purpose of reporting a spill.

Table 2

MEMBERSHIP OF THE NATIONAL OIL SPILL RESPONSE ADVISORY COMMITTEE

Chairman: Shall be appointed by the President on the recommendation of the Minister.

MEMBERS: Shall have one (1) representative each not below the rank of a Director

The Federal Ministry of Environment

The Ministry of Defense:

- The Army
- The Navy
- The Air Force

The Federal Ministry of Petroleum Resources

The Federal Ministry of Transport

The Federal Ministry of Aviation

The Federal Ministry of Employment, Labour and Productivity

The Federal Ministry of Lands, Housing and Urban Development

The Federal Ministry of Information and Communications

The Presidency – National Emergency Management Agency

The Federal Ministry of Health

The Federal Ministry of Foreign Affairs

The Ministry of Interior

The Federal Ministry of Agriculture and Rural Development

The Federal Ministry of Water Resources,

The Nigerian National Petroleum Corporation (NAPIMS)

The Nigeria Police

The Nigerian Institute for Oceanography and Marine Research (NIOMR)

The Oil Producers' Trade Section of the Lagos Chamber of Commerce (OPTS)

The Department of Meteorology

The Nigerian Ports Authority PLC

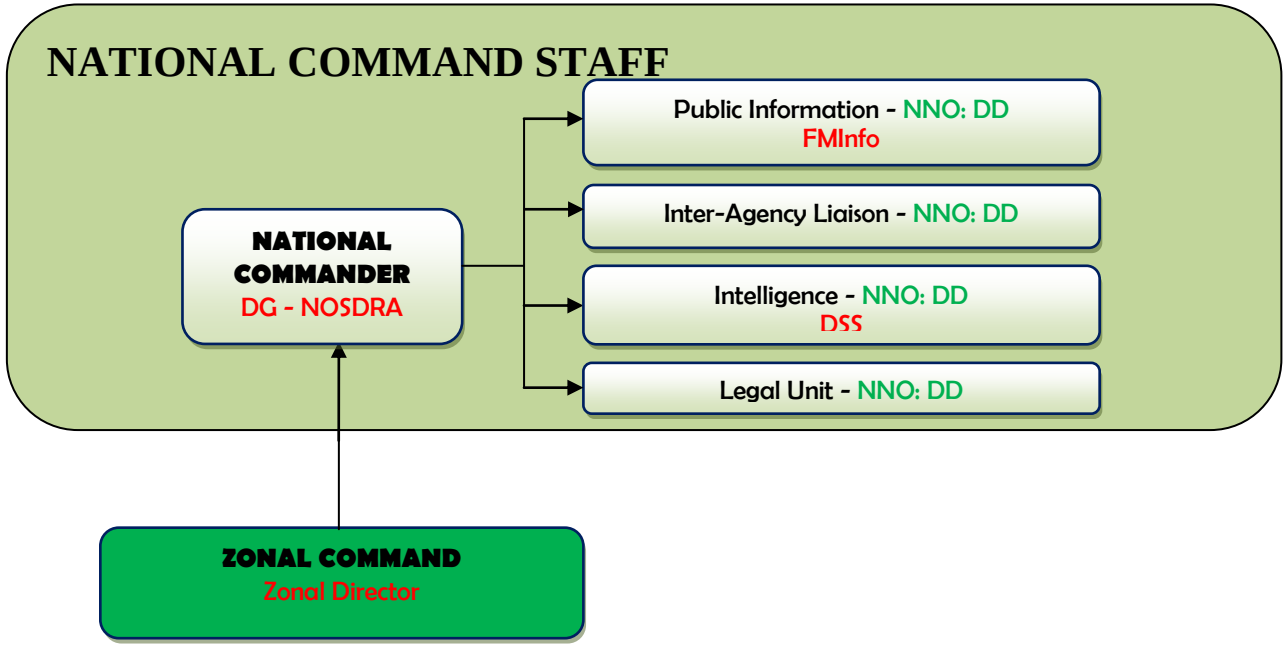
The Nigerian Maritime Administration and Safety Agency (NIMASA)

The Clean Nigeria Associates (C N A)

DG, NOSDRA shall serve as the Secretary

Figure 14. 1

NATIONAL COMMAND STRUCTURE



14.6 NOSDRA Tier 3 – Marine Oil Spill Operations Command (MOSOC)

The Marine Oil Spill Operations Command shall be a special command located within the Nigerian Navy, which through the military chain of command, can be called out by NOSDRA Headquarters in the event of a Tier 3 incident. MOSOC Headquarters will be in Port Harcourt with operational bases located in Lagos, Escravos, Warri, Forcados, Brass, Bonny, Port Harcourt, Calabar/Eket and Igbokoda (Ondo State).

The Marine Oil Spill Operations Command will be required, as directed, to undertake the following functions:-

- Review Common Responsibilities for all ICS personnel;
- Receive briefing from the Operations Section Head (OSH);
- Participate in preparation of the Incident Action Plan (IAP) through the OSH.
- Command, control, co-ordinate and implement all response operations in marine environment;
- Carry out surveillance and monitoring of Nigerian Waters to ensure compliance with National Environmental Legislation;
- Enforce Nigerian Environmental legislation
- Identify Divisions, Groups, and resources assigned to the Marine Operations;
- Ensure through chain of command that Resources Unit is advised of changes in the status of resources assigned to the Command;
- Report to OSH when: the IAP is to be modified; additional resources are needed; surplus resources are available; or hazardous situations or significant events occur;
- Approve accident and medical reports originating within the Command;
- Consider demobilization well in advance;
- Debrief with OSH and/or as directed at the end of each shift;

- Direct, coordinate, and assess the effectiveness of onwater recovery actions;
- For aerial application of dispersant, the Command works closely with the Airborne Oil Spill Operations Command;
- Assist the Planning Section in the development of dispersant operations and monitoring plans and Implement approved dispersant operations and monitoring plans.
- Manage dedicated dispersant resources and coordinate required monitoring.
- Maintain Unit/Activity Log
- Attend tactics and planning meetings as requested by the OSH;
- The training and exercising of Marine Oil Spill Operations Command personnel and assets both in-house and in conjunction with other related units to maintain and continually develop response capabilities; and,
- Other special marine activities to utilize fully the Command's marine assets and skills.

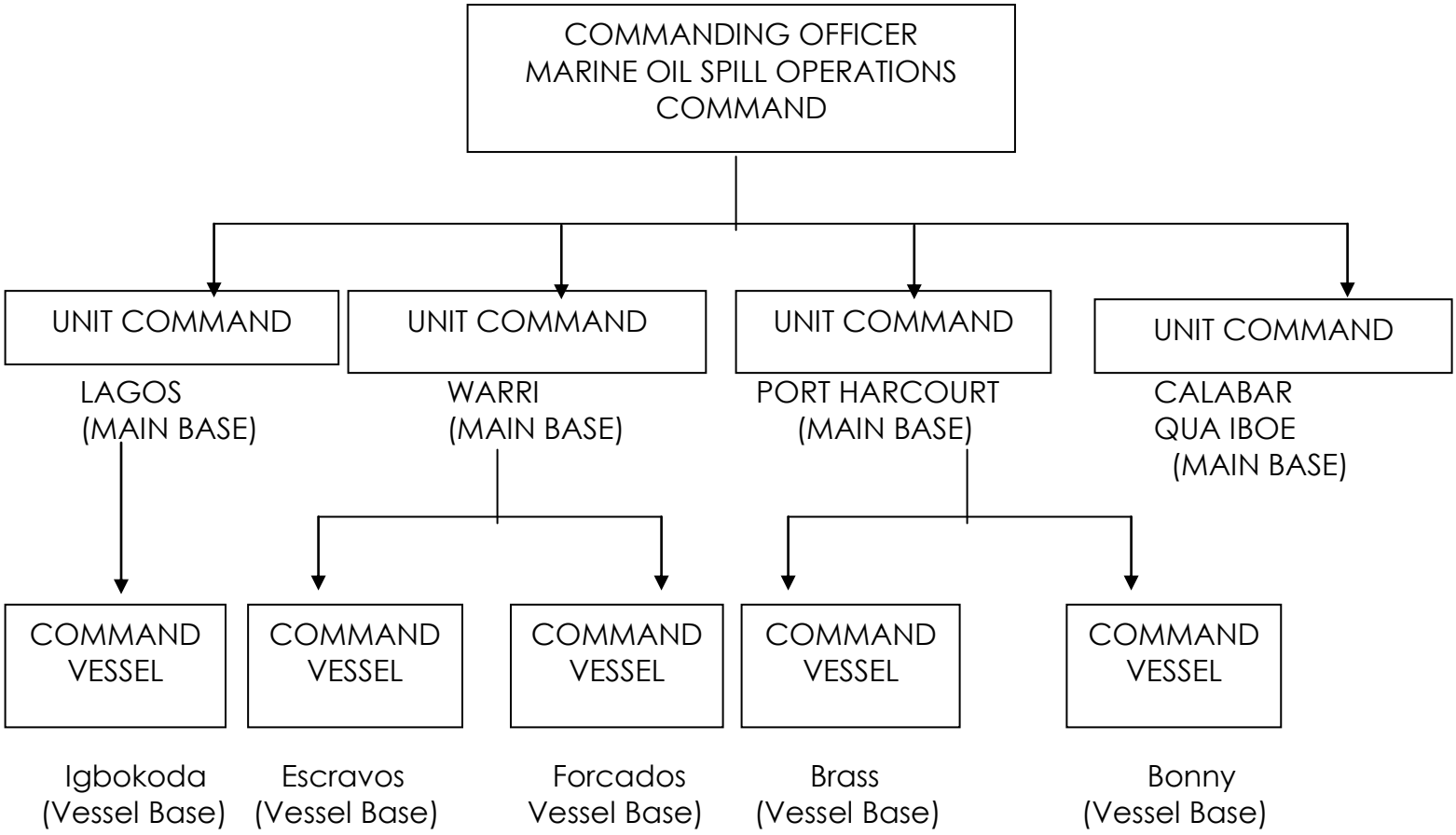
Figure 14.2

NOSDRA Tier 3

NIGRIAN NAVY
MARINE OIL SPILL OPERATIONS COMMAND

ORGANISATIONAL STRUCTURE

PORT HARCOURT HEADQUARTERS



14.7 NOSDRA Tier 3 – Airborne Oil Spill Operations Command (AOSOC)

The Airborne Oil Spill Operations Command shall be a special command located within the Nigerian Airforce, which through the military chain of command, can be called out by NOSDRA Headquarters. The Headquarters of AOSOC will be in Port Harcourt with operational bases at Lagos, Port Harcourt, Benin and Kaduna, Benin Maritime Air patrol center.

The Airborne Oil Spill Operations Command will be required, as directed, to undertake the following functions:-

- Review Common Responsibilities for all ICS personnel;
- Supervise all air operations activities associated with the incident;
- Command, control, co-ordinate and implement aerial response operations;
- Carry out aerial application of approved dispersants, as directed;
- Conduct aerial surveillance and monitoring activities to ensure compliance with National Environmental Legislation;
- Enforce Nigerian Environmental legislation;
- Work with the Environment Unit to conduct Remote Sensing Operations for the collection and monitoring of key environmental parameters;
- Attend the tactics meeting and planning meeting to obtain information for completing the Air Operations Summary Worksheet, if needed;
- Participate in preparation of the Incident Action Plan (IAP) through the OSH;
- Ensure that the air operations portion of the IAP takes into consideration the Air Traffic Control requirements of assigned aircraft;
- Coordinate with the Communications Unit Head (CH) to designate air tactical and support frequencies;

- Evaluate helibase and helispot locations;
- Establish procedures for emergency reassignment of aircraft;
- Coordinate approved flights of non-incident aircraft in the Temporary Flight Restriction;
- Consider requests for logistical use of incident aircraft;
- Report to the OSH on air operations activities;
- Report special incidents/accidents;
- Develop Aviation Site Safety Plan in concert with HSH;
- Arrange for an accident investigation team when warranted;
- Debrief with OSH as directed at the end of each shift;
- Maintain Unit/Activity Log;
- The training and exercising of Airborne Oil Spill Operations Command personnel and assets both in-house and in conjunction with the Marine Oil Spill Operations Command to maintain and continually develop response capabilities;
- Other special airborne activities to fully utilize the Command's airborne assets and skills.

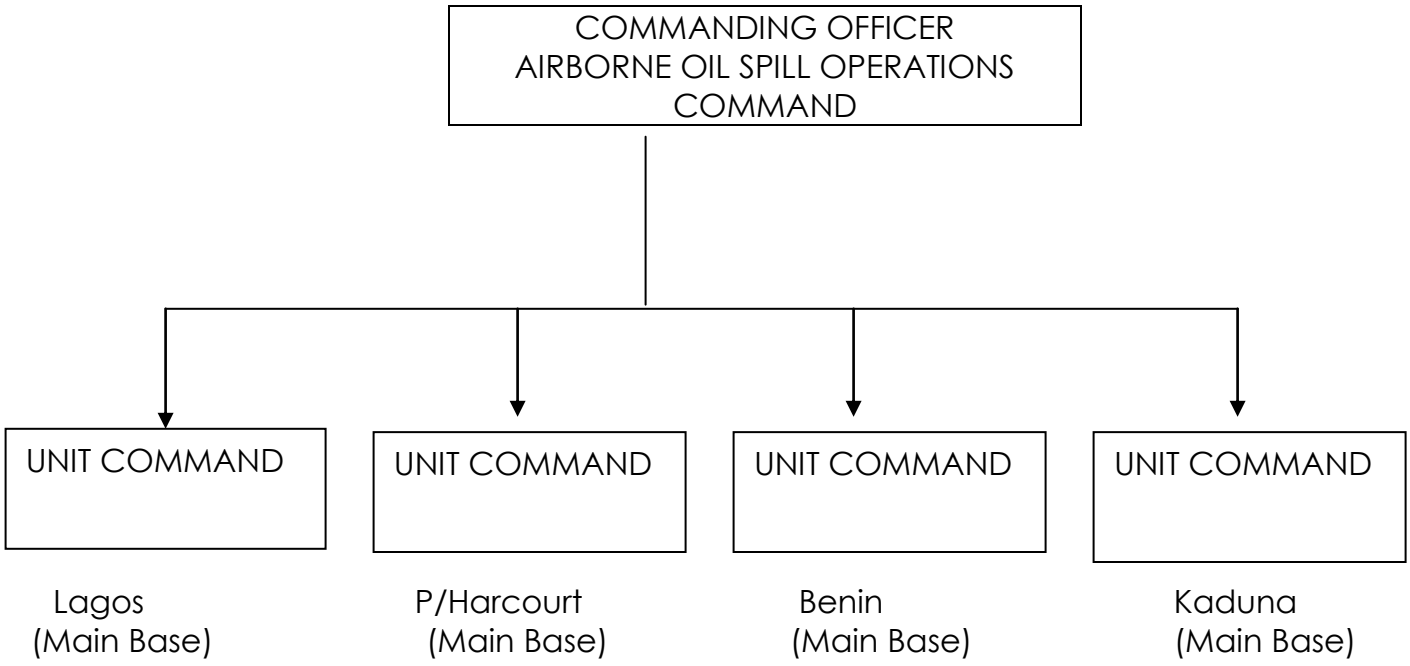
Figure 14.3

NOSDRA TIER 3

NIGRIAN AIRFORCE
AIRBORNE OIL SPILL OPERATIONS COMMAND

Organizational Structure

PORT HARCOURT HEADQUARTERS



14.8 Zonal Command and Control Response Centre

For operational efficiency, NOSDRA has established six Zonal Offices within the Federal Republic of Nigeria, each of which will directly report to the NOSDRA National Headquarters. These six Zonal Offices are located at NOSDRA Zonal Offices in Akure, Lagos, Warri, Port Harcourt, Uyo and Kaduna. Each Office is headed by a Zonal Commander who shall be the NOSDRA Zonal Director. The Zonal Commander will report to the National Commander and will operate from a headquarter unit with a structure similar to the national headquarters.

The zonal headquarters are to receive the spill report for all spills occurring within the zone and in turn pass the same information to the national headquarters. Zonal Commanders will have the authority to approve the use of approved dispersants within their zone subject to NOSDRA Guidelines. They will liaise with and monitor the On-scene Commanders directing any spill response within the zone. They will have the authority to call for a change of On-scene Commanders, approve disposal techniques and as well call for a Tier 2 (CNA) response if they determine a Tier 1 response inadequate. Finally, all requests for activation of Tier 3 Response Unit within their zone will come through them.

Figure 14 .4

ZONAL COMMAND AND CONTROL ORGANISATIONAL STRUCTURE

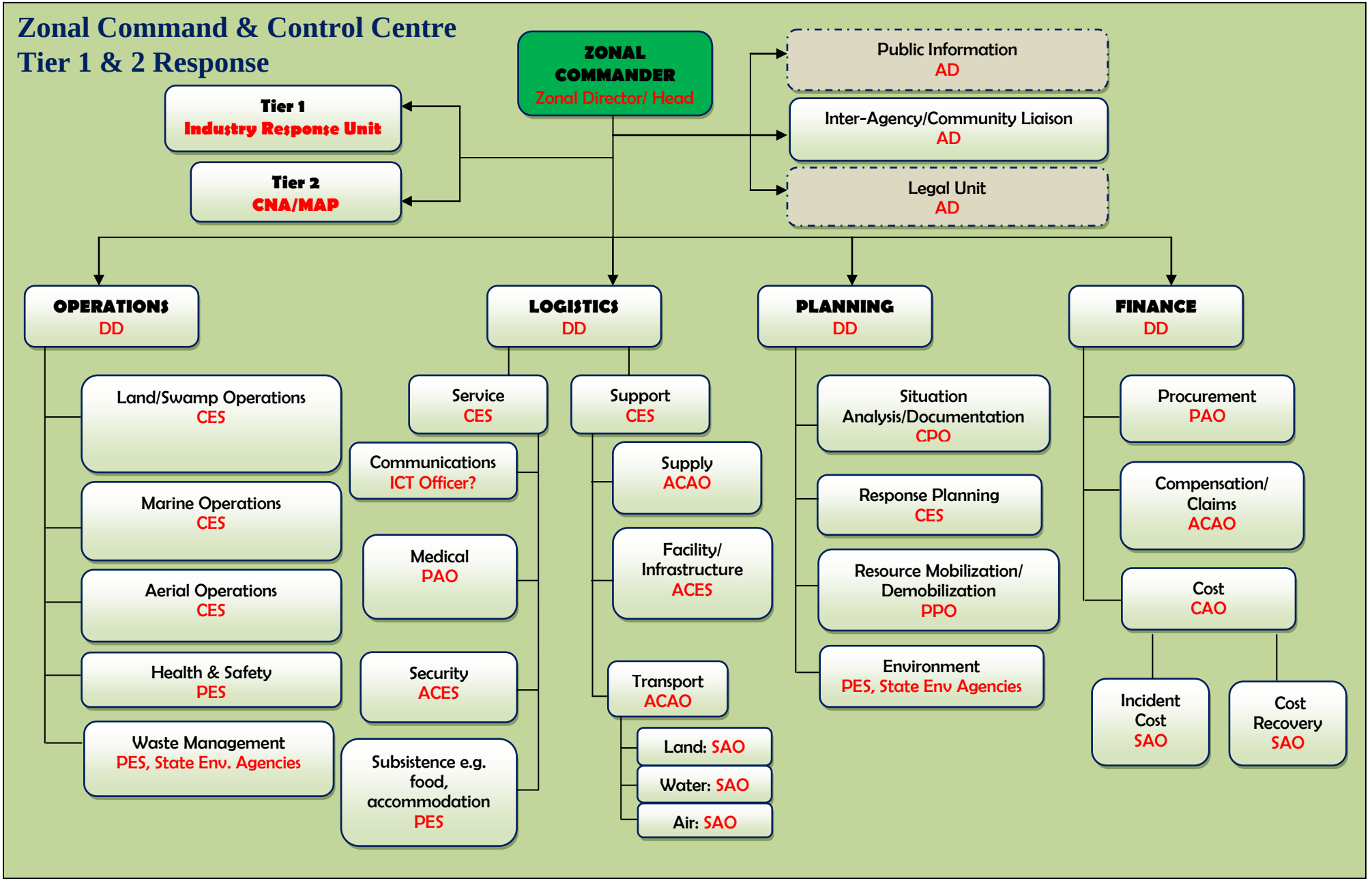


Table 3

ZONAL COMMAND AREAS

The coverage areas of the six zonal commands are as displayed in this table.

ZONE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
HEADQUARTERS	**ABUJA**	**LAGOS**	**WARRI**	**PORT HARCOURT**	**KADUNA**	**UYO**
CATCHMENT AREAS (STATES)	**MINNA** **NASARAWA** **NIGER** **KOGI** **KWARA** **PLATEAU**	**LAGOS** **OGUN** **OSUN** **OYO**	**DELTA** **EDO** **ONDO** **EKITI**	**RIVERS** **IMO** **ANAMBRA** **ABIA** **ENUGU** **BAYELSA** **EBONYI**	**KADUNA** **KANO** **SOKOTO** **KEBBI** **KATSINA** **JIGAWA** **BAUCHI** **YOBE** **BORNO** **GOMBE** **ZAMFARA**	**AKWA IBOM** **CALABAR** **BENUE** **TARABA** **ADAMAWA**

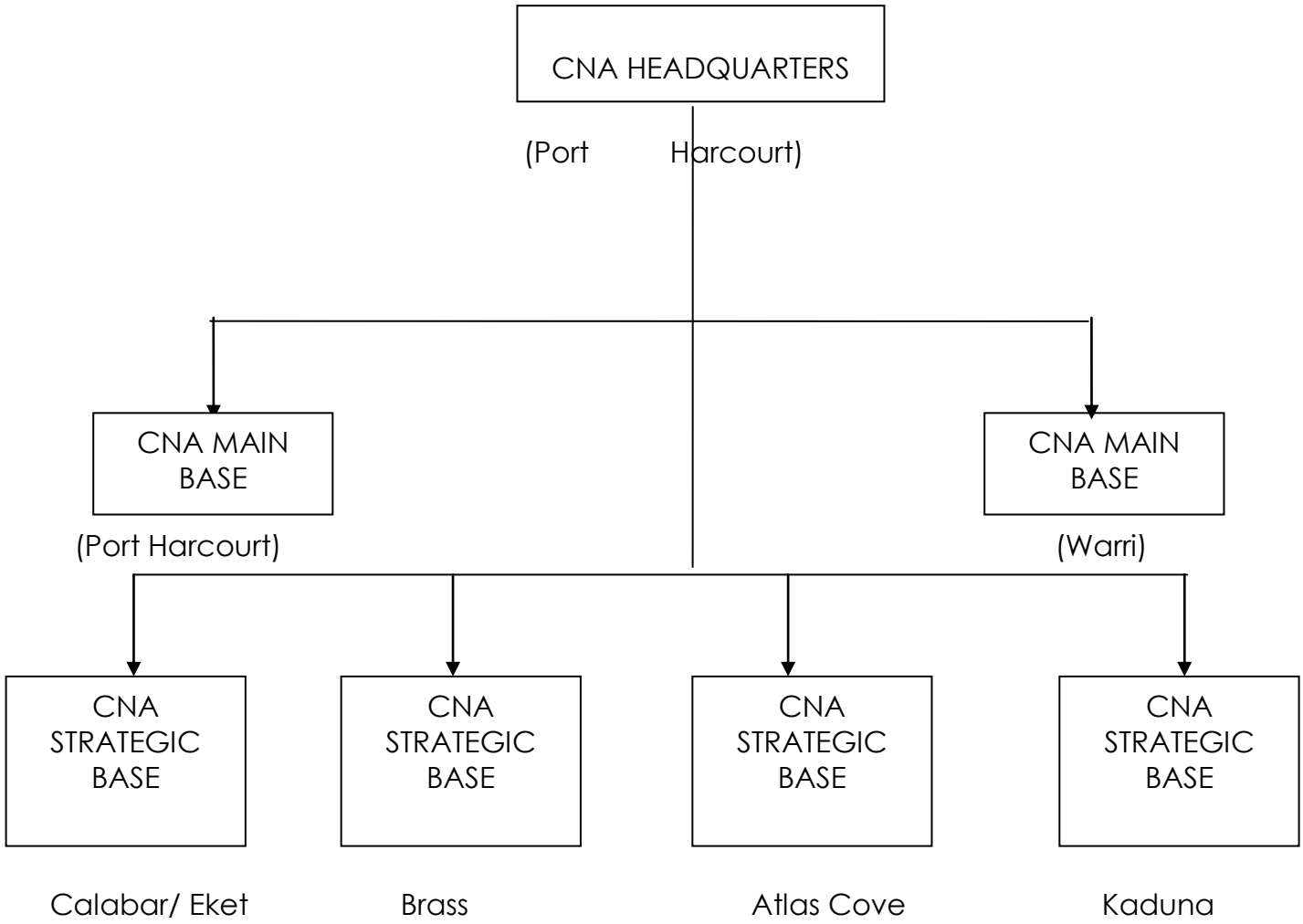
14.9 Tier 1 Response Organization

- As specified in Individual Company Contingency Plans
- Will be regularly audited and Tested by appropriate Zonal Commands.

14.10 Tier 2 Response Organization- Clean Nigeria Associates (CNA)

Figure 14.5

CNA SPILL RESPONSE ORGANISATIONAL STRUCTURE



14.11 Government/Industry Relations

For effective and efficient command execution a smooth Government/Industry interface is required throughout all faces of any response. While command boundaries cannot be precisely specified without reference to the particular spill situation, the following table gives a guideline.

Table 4

SAMPLE: GOVERNMENT/INDUSTRY RELATIONS

RESPONSE REACTION GUIDELINES

DIRECTOR GENERAL (NOSDRA) TO BE INFORMED OF ALL SPILLS AT ALL TIMES

INCIDENT TYPE	OIL COMPANY	PORT AUTHORITY	CNA	NIMASA	NOSDRA	EXTERNAL REINFORCEMENT	COMMAND
MINOR INCIDENT TIER 1 0 – 25 bbls (inland waters) 0 – 250 bbls (land/coastal or offshore waters) TANKER AT FACILITY	RESPOND	-	STAND-BY		MONITOR		OIL COMPANY
OIL FACILITY	RESPOND	-	STAND-BY		MONITOR		OIL COMPANY
NON TANKER IN PORT		RESPOND	-		STAND-BY		PORT AUTHORITY
TANKER &NON TANKER AT SEA			-	RESPOND	RESPOND		NOSDRA
UNIDENTIFIED SLICK				RESPOND	RESPOND		
LARGE INCIDENT TIER 2 25 – 250 bbls (inland waters) 250 – 2500 bbls (land/coastal or offshore waters) ANYWHERE IN NIGERIAN WATERS	RESPOND	-	RESPOND	RESPOND	MONITOR STAND-BY		OIL COMPANY WITH CNA IN SUPPORT
ONLAND IN NIGERIA			RESPOND		MONITOR STAND-BY		OIL COMPANY
MAJOR INCIDENT CATASTROPHIC SPILL > 2500 bbls (inland waters) > 2500 bbls (land/coastal or offshore waters) ANYWHERE IN NIGERIAN TERRITORIAL WATERS	RESPOND	-	RESPOND		RESPOND	STAND-BY	NOSDRA

15.0 DUTIES AND RESPONSIBILITIES OF KEY PERSONNEL:

15.1 GENERAL RESPONSIBILITIES

15.1.1 All Personnel

The following checklist is applicable to all personnel in the Incident Command System (ICS):

a. Receive assignment from your Organization, including:
   - Job assignment for the incident
   - Brief overview of type and magnitude of incident.
   - Travel instructions including reporting location and reporting time.
   - Any special communications instructions (e.g. travel, radio frequency).
   - Assess personal equipment readiness for specific incident and climate (e.g. medications, money, computer, medical record, visa, passport etc.).
   - Inform others as to where you are going and how to contact you.
   - review your role in NOSCP
   - Take advantage of available time to rest prior to arrival.

b. Upon arrival at the incident, check in at the designated check-in location. **Note:** If you are instructed to report directly to an on-scene assignment, check in with the Operations Section Head.

c. Receive briefing from immediate supervisor.

d. Agency representatives from assisting or cooperating agencies / organisations are to report to the Liaison Officer after check-in.

e. Acquire work materials.

f. Participate in incident management (emergency management team - EMT) meetings and briefings as appropriate.
g. Ensure compliance with all safety practices and procedures.
h. Report unsafe conditions / situations to the Safety Officer.
i. Organise and brief subordinates.
j. Know your assigned communication methods and procedures for your area of responsibility and ensure that communication equipment is operating properly.
k. Use clear text and ICS terminology (no codes) in all radio communications.
l. Complete forms and reports required of the assigned position and ensure proper disposition of incident documentation as directed by the Situation Analysis/Documentation Unit.
m. Ensure all equipment is operational prior to each work period.
n. Report any signs/symptoms of extended incident stress, injury, fatigue or illness for yourself or co-workers to your supervisor.
o. Brief shift replacement of ongoing operations when relieved at operational periods or ends of rotation.
p. Respond to demobilization orders and brief subordinates regarding demobilization.
q. Prepare personal belongings for demobilization.
r. Return all assigned equipment to appropriate location.
s. Complete Demobilization Check-out process before returning to home location.
t. Participate in after-action activities as directed.
u. Carry out all assignments as directed.
v. Upon demobilization, notify your Unit/Section Head at incident site and your Organization of your safe return.
w. Maintain Unit/Activity log

15.1.2 Unit Heads

Reports to: appropriate Section/Branch Head

(Operations, Planning, Logistics, Finance)

In addition to the general responsibilities for all personnel, the following checklist is applicable to all Unit Heads in the Incident Command:

a. Review Common Responsibilities for all ICS personnel
b. Upon check-in, receive briefing from Incident Commander, Section Head, or Branch Head as appropriate.
c. Participate in planning meetings and briefings, as required.
d. Determine current status of unit activities.
e. Determine resource needs.
f. Order additional unit staff, as appropriate.
g. Confirm dispatch and estimated time of arrival of staff and supplies.
h. Assign specific duties to staff and supervise staff.
i. Develop and implement accountability, safety and security measures for personnel and resources.
j. Supervise demobilization of unit, including storage of supplies.
k. Provide Supply Unit Leader with a list of supplies to be replenished.
l. Direct volunteer inquiries to RMDH
m. Maintain unit records, including Unit Log
n. Ensure individual responders maintain personal log of actions, decisions and events
o. Carry out all assignments as directed.

15.2 National Commander (NC)

The National Commander who shall be the Director General (NOSDRA) shall be appointed by the President on the recommendation of the Federal Ministry of the Environment.

Reports to: Minister of Environment.

The responsibilities of the NC are:

a. Exercise overall authority and responsibility in the management of all activities related to the control, and effective combat of any spill and associated incident for which this plan is called up at ANY level
b. Review the General Responsibilities for all ICS personnel
c. Ensure that he is promptly informed of all major or disastrous oil spill incidents by setting up apropriate machinery
b. Receive and evaluate notification of potential major environmental incidents (regarding oil spills), and conveys same information to the Minister of Environment
c. Sets up the National Command and Control Response Centre (NCCRC)
d. Determine, in consultation with members of the National Oil Spill Response Organization whether or not, to activate the Tier 3 Response Units
e. Establish priorities and determine incident objectives and general direction for managing the incident.
f. Determine which Federal Agencies or other organizations (local or foreign) should be called up in the course of an oil spill response operation, and so advises the Minister of Environment
g. Integrate into the Incident Action Plan (IAP), the services of any such agencies/organizations to achieve optimum results
h. Ensure that planning meetings are scheduled as required.
i. Approve and authorize the implementation of an Incident Action Plan.
j. Ensure that adequate safety measures are in place.
k. Brief Command Staff and Section Heads.
l. Coordinate activities for all Command and General Staff.

m. Approve requests for additional resources or for the release of resources.
n. Approve the use of trainees, volunteers, and auxiliary personnel.
o. Ensure an effective and accurate information flow within his organization and between his organization and the public.
p. Order the demobilization of the incident when appropriate.
q. Maintains Unit Log
r. Serve as a Member and Secretary to Governing Board.

15.3 Zonal Commander (ZC)

Reports to: National Commander.

The responsibilities of the ZC are:

a. Exercise overall authority and responsibility in the management of all activities related to the control, and effective combat of any spill and associated incident for which this Plan is called up at the ZONAL level
b. Review the General Responsibilities for all ICS personnel
c. Ensure that he is promptly informed of any spill incidents and reports same to the National Command and Control Response Center.
d. Issue Zonal approval for the use of dispersant
e. Ensure Zonal activation of Tier 2 (CNA) if Tier 1 Response is inadequate
f. Designate On-scene Commanders
g. Request Director General to activate NOSDRA Tier 3 Response Unit
h. Issue Zonal approval of disposal technique
i. Ensure unimpeded communication between the Zonal Command and Control Response Centre and combating teams.

j. Exercise overall responsibility for matters of public relations, law and order in his area of jurisdiction.

k. Submit reports to the Director General (NOSDRA)

l. Set up machinery for receiving reports on oil spill incidents.

m. Compile and maintain a list of equipment and their locations, that can be called up in any emergency

n. Compile and maintain a list of personnel that could be called up for oil spill response at any time

15.4 On-Scene-Commander (OSC)

The OSC is responsible for managing response operations on site with the On-Scene Response team. He is the "link" between the field and the zonal/national command team. The OSC should be constantly aware of new developments in oil spill cleanup methods, equipment, and materials; should possess an in-depth knowledge of the behaviour of spilled oil on land and in water, (for rivers, coastal and offshore areas) and have the ability to predict its movement.

Reports to: National or Zonal Commander as the case may be.

The responsibilities of the OSC are:

a. Review the General Responsibilities for all ICS personnel

b. Study and review cleanup activities from historical facts of past spills within and outside Nigeria

c. Initiate training programmes for members of the combating teams

d. Ensure the setting up of a staging area during an oil spill response incident

e. Ensure proper recording of the actual movement of oil slicks and prediction of future tracks and response actions

f. Constantly survey the areas affected by the incident and evaluate the overall effectiveness of any efforts.

g. Recommend any corrective or additional action including equipment and manpower to the Zonal or Director General as the case may be

h. Delegate various assignments as deemed fit to the response team(s)/personnel assigned to deal with any incident.

i. Ensure effective communication among sub-groups/units involved in the combat of any incident.

j. Ensure that proper liaison is maintained with cleanup contractors if any is employed.

k. Work closely with OSCs in the other Zones to ensure that additional equipment, personnel and supplies as necessary are promptly obtained.

l. Ensure that maps, charts, etc are constantly maintained in a manner to promote efficient operation and equipment utilization.

m. Maintain communication with local representatives of the impacted community

15.5 Operations Section Head (OSH)

Reports to: National Commander

The responsibilities of the OSH are:

a. Review General Responsibilities for all ICS personnel.

b. Obtain briefing from NC.

c. Evaluate and request sufficient Section supervisory staffing for both operational and planning activities.

d. Supervise Operations Section field personnel.

e. Implement the IAP for the Operations Section.

f. Evaluate on-scene operations and make adjustments to organisation, strategies, tactics, and resources as necessary.

g. Ensure the RMDH is advised of changes in the status of resources assigned to the section.

h. Ensure that Operations Section personnel execute work assignments following approved safety practices.

i. Monitor need for and request additional resources to support operations as necessary.

j. Assemble/dissemble task force/strike teams as appropriate.

k. Identify/utilise staging areas.

l. Evaluate and monitor current situation for use in next operational period planning.

m. Convert operational incident objectives into strategic and tactical options. These options may be documented on a Work Analysis Matrix

n. Coordinate and consult with the Planning Section Head (PSH), Health and Safety Branch Head (HSH), technical specialists, modelling scenarios, trajectories, etc., on selection of appropriate strategies and tactics to accomplish objectives.

o. Identify kind and number of resources required to support selected strategies.

p. Subdivide work areas into manageable units.

q. Develop work assignments and allocate tactical resources based on strategic requirements

r. Coordinate planned activities with the HSH to ensure compliance with safety practices.

s. Participate in the planning process and the development of the tactical portions of the IAP.

t. Assist with development of long-range strategic, contingency, and demobilization plans.

u. Develop recommended list of Section resources to be demobilised and initiate recommendation for release when appropriate.

v. Receive and implement applicable portions of the incident Demobilization Plan.

w. Participate in operational briefings to Emergency Management Team (EMT) members as well as briefings to media, and visiting dignitaries.

x. Maintain Unit Log

15.5.1 Land/Swamp Operations Branch Head (LOSH)

Reports to: Operations Section Head (OSH)

The responsibilities of the LOSH are:

a. Review General Responsibilities for all ICS personnel

b. Implement the portion of the IAP appropriate to the Land/Swamp Operations.

c. Obtain briefing from person relieving.

d. Receive briefing from the OSH.

e. Identify Divisions, Groups, and resources assigned to the Land/Swamp Operations.

f. Ensure that Units and/or Group Supervisors have a copy of the IAP.

g. Develop with subordinates alternatives for Land/Swamp control operations.

h. Review Unit/Group Assignment Lists for Units/Groups within the Branch.

i. Modify lists based on effectiveness of current operations.

j. Assign specific work tasks to Unit Heads.

k. Supervise Branch operations.

l. Resolve logistic problems reported by subordinates.

m. Attend planning meetings as requested by the OSH.

n. Ensure through chain of command that Resources Unit is advised of changes in the status of resources assigned to the Branch.

o. Report to OSH when: the IAP is to be modified; additional resources are needed; surplus resources are available; or hazardous situations or significant events occur.

p. Approve accident and medical reports originating within the Branch.

q. Consider demobilization well in advance.

r. Debrief with OSH and/or as directed at the end of each shift.

s. Oversee and implement protection, containment and cleanup activities established in the IAP.

t. Deployment of containment, deflection, and adsorbent/absorbent materials in designated locations.

u. Implement Protection Strategies in the IAP.

v. Direct, coordinate, and assess the effectiveness of protective actions.

w. Modify protective actions, as needed.

x. Maintain Unit Log

15.5.2Marine Operations Branch Head (MOH)

Reports to: Operations Section Head (OSH)

Refer to Chapter 14.6 NOSDRA Tier 3 Marine Oil Spill Operations Command (MOSOC)

15.5.3Airborne Operations Branch Head (AOH)

Reports to: Operations Section Head (OSH)

Refer to Chapter 14.7 NOSDRA Tier 3 Airborne Oil Spill Operations Command (AOSOC)

15.5.4Health and Safety Branch Head (HSH)

Reports to: Operations Section Head (OSH)

The responsibilities of the HSH are:

a. Review General Responsibilities for all ICS personnel.
b. Participate in tactics and planning meetings, and other meetings and briefings as required.
c. Identify hazardous situations associated with the incident.
d. Review the IAP for safety implications.
e. Provide safety advice in the IAP for assigned responders.
f. Exercise emergency authority to stop and prevent unsafe acts.
g. Investigate accidents that have occurred within the incident area.
h. Assign assistants, as needed.
i. Review and approve the Medical Plan
j. Develop the Site Safety Plan and publish Site Safety Plan Summary as required.
k. Develop the Work Safety Analysis Worksheet as required.
l. Ensure that all required agency forms, reports and documents are completed prior to demobilization.
m. Brief Command on safety issues and concerns.
n. Have debriefing session with the IC prior to demobilization.
o. Maintain Unit Log

15.5.5Waste Management Branch Head (WMH)

Reports to: Operations Section Head (OSH)

The responsibilities of the WMH are:

a. Review General Responsibilities of all ICS personnel
b. Implement the Disposal Portion of the IAP.
c. Ensure compliance with all hazardous waste laws and regulations.

d. Maintain accurate records of recovered material.

e. Implement Decontamination Plan.

f. Determine resource needs.

g. Direct and coordinate decontamination activities.

h. Brief Site Health & Safety Officer (HSH) on conditions.

i. Maintain Unit Log

15.6 Planning Section Head (PSH)

Reports to: National Commander

The responsibilities of the PSH are:

a. Review General Responsibilities for all ICS personnel

b. Collect, process, and display incident information and incident status information

c. Keep EMT apprised of any significant changes in incident status.

d. Provide periodic predictions on incident potential.

e. Assist OSH in the development of response strategies.

f. Assemble information on alternative strategies.

g. Supervise preparation of the IAP.

h. Incorporate plans (e.g., Traffic, Medical, Communications, and Site Safety) into the IAP.

i. Facilitate planning meetings and briefings.

j. Supervise the tracking of incident personnel and resources through the Resources Unit.

k. Assign personnel already on-site to ICS organizational positions as appropriate.

l. Establish information requirements and reporting schedules for Planning Section Branches and Units (e.g., Resources, Situation).

m. Determine the need for any specialized resources in support of the incident.

j. Establish special information collection activities as necessary (e.g., weather, environmental, toxics, product information, etc.).

k. Oversee preparation and implementation of the Incident Demobilization Plan.

n. Develop other incident supporting plans (e.g., salvage, transition, security, aviation).

o. Maintain Unit Log

15.6.1 Situation Analysis/Documentation Branch Head (SADH)

Reports to: Planning Section Head (PSH)

The responsibilities of the SADH are:

a. Review the General Responsibilities for all ICS personnel

b. Begin collection and analysis of incident data as soon as possible.

c. Prepare, post, or disseminate resource and situation status information as required, including special requests.

d. Prepare periodic predictions or as requested by the PSH e.g. weather observations and forecasts, oil spill trajectory models e.t.c.

e. Prepare the Incident Status Summary Form

f. Provide photographic services and maps if required.

g. Conduct situation briefings at meetings and briefings as required by the PSH.

h. Develop and maintain master chart(s)/map(s) of the incident.

i. Maintain chart/map of incident in the common area of the Incident Command Post (ICP) for all responders to view.

j. Set up work area; begin organization of incident files.

k. Establish duplication service; respond to requests.

l. File all official forms and reports.

m. Review records for accuracy and completeness; inform appropriate units of errors or omissions.
n. Provide incident documentation as requested.
o. Organize files for submitting final incident documentation package.
p. Maintain Unit Log

15.6.2 Response Planning Branch Head (RPH)

Reports to: Planning Section Head (PSH)

The responsibilities of the RPH are:

a. Review the General Responsibilities for all ICS personnel
b. Evaluate the opportunities to use various response technologies, including mechanical containment and recovery, dispersant or other chemical countermeasures, in-situ burning, and bioremediation.
c. Conduct the consultation and planning required by deploying specific response technology(ies),
d. Articulate the environmental tradeoffs (Net Environmental Benefit Analysis - NEBA) of using or not using a specific response technique.
e. Participate in planning meetings, as required.
f. Determine resource needs.
g. Gather data pertaining to the spill, including spill location, type and amount of material spilled, physical and chemical properties, weather and sea conditions, and resources at risk.
h. Identify the available response technologies (RT) that may be effective on the specific spilled material.
i. Make initial notification to all agencies that have authority over the use of RT.
j. Keep the PSH advised of RT issues.

k. Provide status reports to appropriate requesters.

l. Establish communications with the OSH to coordinate RT activities.

m. Maintain Unit Log

15.6.3 Resource Mobilization/Demobilization Branch Head (RMDH)

Reports to: Planning Section Head (PSH)

The responsibilities of the RMDH are:

a. Review the General Responsibilities for all ICS personnel

b. Establish the check-in and check-out function at incident locations.

c. Maintain and post the current status and location of all tactical resources.

d. Maintain master roster of all tactical resources checked in/checked out at the incident.

e. Attend meetings and briefings as required by the PSH.

f. Receive, record, and maintain resource status information on Resource Status Cards for incident-assigned tactical resources, and overhead personnel.

g. Maintain files of Check-in and Check-out Lists for both personnel and equipment

h. Review incident resource records to determine the likely size and extent of the demobilization effort and develop a resource matrix.

i. Coordinate demobilization with Agency/Organization Representatives.

j. Monitor the on-going Operations Section resource needs.

k. Identify surplus resources and probable release time.

l. Establish communications with off-incident facilities, as necessary.

m. Develop and distribute an Incident Demobilization Plan that should include:

- General information section
- Responsibilities section
- Release priorities
- Release procedures
- Demobilization Checkout Form
- Directory

n. Prepare appropriate directories (e.g., maps, instructions, etc.) for inclusion in the demobilization plan.

o. Provide status reports to appropriate requestors.

p. Ensure that all Sections/Units understand their specific demobilization responsibilities.

q. Supervise execution of the Incident Demobilization Plan

r. Brief the PSH on demobilization progress.

s. Maintain Unit Log

15.6.4 Environment Branch Head (EH)

Reports to: Planning Section Head (PSH).

The responsibilities of the EH are:

a. Review the General Responsibilities for all ICS personnel

b. Prepare environmental data (modelling, surveillance, and environmental monitoring and permitting e.t.c.) for the Situation Unit.

c. Obtain a briefing and special instructions from the PSH.

d. Identify sensitive areas and recommend response priorities.

e. Following consultation with natural resource trustees, provide input on wildlife protection strategies (e.g., removing oiled carcasses, pre-emptive capture, hazing, and/or capture and treatment).

f. Determine the extent, fate, and effects of contamination.

g. Acquire, distribute, and provide analysis of weather forecasts, if required
h. Monitor the environmental consequences of response actions.
i. Develop shoreline cleanup and assessment plans.
j. Identify the need for, and prepare any special advisories or orders.
k. Identify the need for, and obtain, permits, consultations, and other authorizations.
l. Following consultation with Local Community Representative, identify and develop plans for protection of affected historical/cultural resources.
m. Work with Waste Management Branch Head to develop waste disposal plans
n. Develop a plan for collecting, transporting, and analyzing samples.
o. Maintain Unit Log

15.6.5 Technical Specialists Branch Head (TSH)

Reports to: Planning Section Head (PSH) or to the appropriate Section Head.

Technical Specialists are activated as the need arises. They may be assigned wherever their services are needed.

The responsibilities of the TSH are:

a. Review the General Responsibilities for all ICS personnel
b. Provide technical expertise and advice to Command and General Staff as needed.
c. Attend meetings and briefings as appropriate to clarify and help to resolve technical issues within area of expertise.
d. Provide technical expertise during the development of the IAP and other support plans.

e. Work with the Safety Officer (HSH) to mitigate unsafe practices.
f. Work closely with Liaison Officer to help facilitate understanding among stakeholders and special interest groups.
g. Research technical issues and provide findings to decision makers.
h. Trouble shoot technical problems and provide advice on resolution.
i. Review specialized plans and clarify meaning.
j. Maintain Unit Log

15.6.6 Examples of Technical Specialists That May be Needed

- Scientific Support Coordinator
- Sampling Technician
- Response Technologies Specialist
- Trajectory Modeling and Analysis Specialist
- Weather Forecast Specialist
- Historical/ Cultural Resources Specialist
- Disposal/Waste Technical Specialists
- Veterinerary Doctor
- Plant Specialist
- Mangrove Specialist
- Ecologist
- Hazardous Waste Specialist
- Laboratory Scientist
- Auxiliary Liaison Specialist
- Legal Specialist
- Volunteer Specialist/Coordinator
- Helibase Manager
- Helispot Manager

- Documentation Specialist
- Geographic Information System Specialist
- Public Health Specialist
- Salvage and Engineering Technical Specialist
- Satellite Analysis Technical Specialist
- Situation Report Specialist Training Specialist
- Berthing Manager
- Camp Manager
- Communications Restoration Manager
- Contingency Communications Manager
- Chaplain
- Critical Incident Stress Management (CISM)
- Damage Assessment Teams
- Evacuation Teams/Specialists
- Entitlement Specialist
- Claims Specialist

15.7 Logistics Section Head (LSH)

Reports to: National Commander

The responsibilities of the LSH are:

a. Review General Responsibilities for all ICS personnel.

b. Plan the organization of the Logistics Section.

c. Assign work locations and preliminary work tasks to Section personnel.

d. Notify the Resources Branch of the Logistics Section when activated, including names and locations of assigned personnel.

e. Assemble and brief Logistics Branch/Unit Heads.

f. Determine and supply immediate incident resource and facility needs.

g. Identify resource needs for incident contingencies.
h. Coordinate and process requests for additional resources.
i. Track resource effectiveness and make necessary adjustments.
j. Advise Command and other Section Chiefs on resource availability to support incident needs.
k. In conjunction with Command, develop and advise all Sections of the EMT about resource approval and requesting procedures.
l. Review proposed tactics for upcoming operational period for ability to provide resources and logistical support.
m. Identify long-term service and support requirements for planned and expected operations.
n. Provide input to and review the Communications Plan, Medical Plan and Traffic Plan.
o. Advise on current service and support capabilities.
p. Develop recommended list of Section resources to be demobilized and initiate recommendation for release when appropriate.
q. Receive and implement applicable portions of the incident Demobilization Plan.
r. Ensure the general welfare and safety of Logistics Section personnel.
s. Maintain Unit Log

15.7.1Service Branch Head (SRH)

Reports to: Logistics Section Head (LSH)

The responsibilities of the SRH are:

a. Review General Responsibilities for all ICS personnel.
b. Manage all service activities at the incident.

c. Supervise the operations of the Communications, Medical, Subsistence and Security Units.
d. Determine the level of service required to support operations.
e. Confirm dispatch of service personnel
f. Organize and prepare assignments for Service personnel.
g. Participate in planning meetings of Logistics Section personnel.
h. Review the IAP.
i. Inform the LSH of Branch activities.
j. Maintain Unit Log

15.7.1.1 Communications Unit Head (CMH)

Reports to: Service Branch Head (SRH)

The responsibilities of the CMH are:

a. Review General Responsibilities for all ICS personnel.
b. Develop plans for the effective use of incident communications equipment and facilities
c. Install and test communications equipment
d. Establish and supervise the Incident Communications Centre and the Message Centre
e. Receive and transmit messages within and external to the incident.
f. Distribute communications equipment to incident personnel
g. Maintain and repair communications equipment.
h. Prepare and implement the Incident Radio Communications Plan
i. Establish appropriate communications distribution/ maintenance locations within the ICP.
j. Provide technical information as required on:
    - Adequacy of communications systems currently in operation.

- Geographic limitation on communications systems.
- Equipment capabilities/limitations.
- Amount and types of equipment available.
- Anticipated problems in the use of communications equipment.

k. Maintain a record of unusual incident occurrences.

l. Provide a briefing to relief personnel on:
   - Current activities.
   - Equipment status.
   - Any unusual communications situations.

m. Supervise Communications Unit activities.

n. Maintain records on all communications equipment as appropriate.

o. Demobilize the Incident Communications and Message Centres in accordance with the Incident Demobilization Plan.

p. Recover equipment from Units being demobilized.

q. Maintain Unit Log

15.7.1.2 Medical Unit Head (MDH)

Reports to: Service Branch Head (SRH)

The responsibilities of the MDH are:

a. Review General Responsibilities for all ICS personnel

b. Participate in Logistics Section/Service Branch planning for the purpose of providing any relevant medical input into the planning process for strategy development.

c. Establish the Medical Unit and prepare the Medical Plan, ensuring that the plan is integrated into the IAP

d. Coordinate with Safety Officer, Operations and others on proper personnel protection procedures for incident personnel.

e. Prepare procedures for major medical emergency.

f. Develop transportation routes and methods for injured incident personnel.

g. Ensure incident personnel patients are tracked as they move from site, medical facility and back to incident or home location.

h. Provide continuity of medical care for incident personnel.

i. Declare major medical emergency as appropriate.

j. Provide or oversee medical and rehab care delivered to incident personnel.

k. Monitor health aspects of incident personnel including excessive incident stress.

l. Respond to requests for medical aid, medical transportation and medical supplies.

m. In conjunction with Finance Section, prepare and submit necessary authorizations, reports and administrative documentation related to injuries, compensation or death of incident personnel.

n. Provide for security and storage/ archiving of incident medical records.

o. Request necessary resources for rehabilitation of personnel, e.g., water, juice, personnel.

p. Request food through the Subsistence Unit or LSH, as necessary, for personnel being rehabilitated.

q. Release rehabilitated personnel for reassignment

r. Maintain appropriate records and documentation.

s. Maintain Unit Log

15.7.1.3 Security Unit Head (SCH)

Reports to: Service Branch Head (SRH)

The responsibilities of the SCH are:

a. Review General Responsibilities for all ICS personnel

b. Establish contacts with local law enforcement Agencies, as required.
c. Contact the Resource Use Specialist for crews or Agency Representatives to discuss any special custodial requirements that may affect operations.
d. Ensure security of classified material and/or systems.
e. Ensure that support personnel are qualified to manage security problems.
f. Develop Security Plan for incident facilities and ensure its integration into the IAP
g. Adjust Security Plan for personnel and equipment changes and releases.
h. Coordinate security activities with appropriate incident personnel.
i. If required, determine need for identification badge system and provide this service.
j. Evaluate and recommend to NC (through LSH) the need for secure communications for both voice and data.
k. Coordinate with on-scene security specialist(s) as needed to ensure security requirements are met.
l. If needed, establish a list of Incident Command personnel levels of security clearance.
m. Keep the peace, prevent assaults and settle disputes through coordination with Agency/Organization Representatives.
n. Prevent theft of all government and personal property.
o. Document all complaints and suspicious occurrences.
p. Maintain Unit Log

15.7.1.4 Subsistence Unit Head (SBH)

Reports to: Service Branch Head (SRH)

The responsibilities of the SBH are:

a. Review General Responsibilities for all ICS personnel.
b. Determine food, water and accommodation requirements.
c. Determine the method of feeding & accommodation to best fit each facility or situation.
d. Obtain necessary equipment and supplies.
e. Ensure that well-balanced menus are provided.
f. Work with Facility/Infrastructure Unit to ensure that adequate and sufficient accommodation is provided, as required
g. Order sufficient food and potable water from the Supply Unit.
h. Maintain an inventory of food and water.
i. Maintain food service areas, ensuring that all appropriate health and safety measures are being followed.
j. Supervise Subsistence Unit personnel as appropriate.
k. Maintain Unit Log

15.7.2Support Branch Head (SUH)

Reports to: Logistics Section Head (LSH)

The responsibilities of the SUH are:

a. Review General Responsibilities for all ICS personnel.
b. Develop and implement logistics plans in support of the Incident Action Plan (IAP)
c. Supervise the operations of the Supply, Facilities/Infrastructure, and Transport Units.
d. Identify Support Branch personnel dispatched to the incident and assemble and brief such personnel.

e. Determine initial support operations in coordination with the LSH and SRH.
f. Prepare initial organization and assignments for support operations.
g. Determine if assigned Branch resources are sufficient.
h. Maintain surveillance of assigned Units work progress and inform the LSH of their activities.
i. Resolve problems associated with requests from the Operations Section.
j. Maintain Unit Log

15.7.2.1 Supply Unit Head (SPH)

Reports to: Support Branch Head (SUH)

The responsibilities of the SPH are:

a. Review General Responsibilities for all ICS personnel.
b. Participate in Logistics Section/Support Branch planning activities.
c. Review the IAP for information on operations of the Supply Unit.
d. Organize the physical layout of the supply area.
e. Establish procedures for operating the supply area.
f. Develop and implement safety and security requirements for supply area
g. Set up a filing system for receiving and distributing supplies and equipment.
h. Receive and respond to requests for personnel, supplies and equipment.
i. Order, receive, distribute and store supplies and equipment.
j. Obtain necessary agency(s) organizational order forms.
k. Establish ordering procedures.

l. Establish name and telephone numbers of agency(s) personnel receiving orders.
m. Maintain an inventory of supplies and equipment.
n. Service reusable equipment.
o. Identify times and locations for delivery of supplies and equipment.
p. Submit all ordering documents to the Documentation Control Unit through the SUH Leader before demobilization.
q. Submit reports to the SUH.
r. Maintain Unit Log

15.7.2.2 Facility/Infrastructure Unit Head (FIH)

Reports to: Support Branch Head (SUH)

The responsibilities of the FIH are:

a. Review General Responsibilities for all ICS personnel.
b. Obtain a briefing from the SUH or the LSH.
c. Receive and review a copy of the IAP.
d. Participate in Logistics Section/Support Branch planning activities.
e. In conjunction with the Finance Section, determine locations suitable for incident support facilities and secure permission to use through appropriate means.
f. Inspect facilities prior to occupation and document conditions and pre-existing damage.
g. Determine requirements for each facility, including the ICP.
h. Prepare layouts of incident facilities.
i. Notify Unit Leaders of facility layout.
j. Activate incident facilities.
k. Provide Facility Managers and personnel to operate facilities.
l. Provide sleeping facilities.
m. Provide sanitation and shower service, as needed.

n. Provide facility maintenance services, e.g., sanitation, lighting, clean up, litter removal, etc.

o. Inspect all facilities for damage and potential claims.

p. Demobilize incident facilities.

q. Maintain facility records.

r. Maintain Unit Log

15.7.2.3 Transport Unit Head (TPH)

Reports to: Support Branch Head (SUH)

The responsibilities of the TPH are:

a. Review General Responsibilities for all ICS personnel.

b. Participate in Support Branch/Logistics Section planning activities.

c. Develop and implement the Traffic Plan.

d. Support out-of-service resources.

e. Repair of primary tactical equipment, vehicles, mobile (transport) support equipment and fuelling services

f. Transport personnel, supplies, food and equipment in support of incident operations

g. Record all land, water and air equipment usage time, including contract equipment assigned to the incident

h. Implement the Traffic Plan for the incident.

i. Notify the RMDH of all status changes on support and transportation vehicles.

j. Determine supplies (e.g., vehicle/machinery fuel, oil and parts needed to maintain equipment in an efficient operating condition) and place orders with the Supply Unit.

k. Maintain Support Vehicle Inventory and transportation vehicles

l. Provide transportation service requests from the LSH or SUH.

m. Collect use information on rented equipment.

n. Requisition maintenance and repair supplies, e.g., fuel, spare parts.

o. Maintain incident roads.

p. Coordinate development of the Vessel Routing Plan.

q. Coordinate vessel/air transportation assignments with other sources of vessel/air transportation.

r. Coordinate water-to-land transportation , as necessary.

s. Maintain a prioritized list of transportation requirements that need to be scheduled with the transportation source.

t. Arrange for fuelling, dockage, maintenance and repair of vessel resources, as requested.

u. Submit reports to SUH as directed.

v. Maintain Unit Log

15.8 Finance Section Head (FSH)

Reports to: National Commander

The responsibilities of the FSH are:

a. Review General Responsibilities for all ICS personnel.

b. Participate in incident planning meetings and briefings as required.

c. Review operational plans and provide alternatives where financially appropriate.

d. Manage all financial aspects of an incident.

e. Provide financial and cost analysis information as requested.

f. Gather pertinent information from briefings with responsible agencies.

g. Develop an operating plan for the Finance Section

h. Fill supply and support needs.

i. Determine the need to set up and operate an incident commissary.

j. Meet with Assisting and Cooperating Agency/ Organization Representatives, as needed.

k. Maintain daily contact with agency(s) administrative headquarters on Finance & Administrative matters.

l. Ensure that all personnel time records are accurately completed and transmitted to home agencies/ organizations, according to policy.

m. Provide financial input to demobilization planning.

n. Ensure that all obligation documents initiated at the incident are properly prepared and completed.

o. Brief agency administrative personnel on all incident related financial issues needing attention or follow-up prior to leaving incident.

p. Receive and implement applicable portions of the incident Demobilization Plan.

q. Maintain Unit Log

15.8.1 Procurement Branch Head (PRH)

Reports to: Finance Section Head (FSH)

The responsibilities of the PRH are:

a. Review General Responsibilities for all ICS personnel.

b. Review incident needs and any special procedures with Unit Leaders, as needed.

c. Coordinate with local authorities on plans and supply sources.

d. Obtain the Incident Procurement Plan.

e. Prepare and authorize contracts, building and land-use agreements.

f. Draft memoranda of understanding as necessary.

g. Establish contracts and agreements with supply vendors.

h. Provide for coordination between the SUH and all other procurement organizations supporting the incident.

i. Ensure that a system is in place that meets agency/ organization property management requirements.

j. Ensure proper accounting for all new property.

k. Interpret contracts and agreements; resolve disputes within delegated authority.

l. Coordinate with the Compensation/Claims Unit for processing claims.

m. Complete final processing of contracts and send documents for payment.

n. Coordinate cost data in contracts with the Cost Branch Head (CTH)

o. Brief the FSH on current problems and recommendations, outstanding issues and follow-up requirements.

p. Maintain Unit Log

15.8.2 Compensation/Claims Branch Head (CCH)

Reports to: Finance Section Head (FSH)

The responsibilities of the CCH are:

a. Review General Responsibilities for all ICS personnel.

b. Obtain a briefing from the FSH.

c. Establish contact with the incident MDH, HSH and ILH (or Agency/Organization Representatives if no ILH is assigned).

d. Determine the need for Compensation for Injury and Claims Specialists and order personnel as needed.

e. Establish a Compensation for Injury work area within or as close as possible to the Medical Unit.

f. Review Incident Medical Plan

g. Ensure that Claims Specialists (CLM) have adequate workspace and supplies.

h. Review and coordinate procedures for handling claims with the Procurement Branch.

i. Brief the CLM on incident activity.

j. Periodically review logs and forms produced by the CLM to ensure that they are complete, entries are timely and accurate, and that they are in compliance with agency/organization requirements and policies.

k. Ensure that all Compensation for Injury and Claims logs and forms are complete and routed to the appropriate agency for post-incident processing prior to demobilization.

l. Keep the FSH briefed on Branch status and activity.

m. Demobilize unit in accordance with the Incident Demobilization Plan.

n. Maintain Unit Log

15.8.3 Cost Branch Head (CTH)

Reports to: Finance Section Head (FSH)

The responsibilities of the CTH are:

a. Review General Responsibilities for all ICS personnel.

b. Obtain a briefing from the FSH.

c. Coordinate with relevant agency/organization on cost reporting procedures.

d. Collect and record all cost data.

e. Develop incident cost summaries.

f. Prepare resources-use cost estimates for the Planning Section.

g. Make cost-saving recommendations to the FSH.

h. Ensure all cost documents are accurately prepared.

i. Maintain cumulative incident cost records.

j. Complete all records prior to demobilization.

k. Provide reports to the FSH.

15.8.3.1 Incident Cost Unit Head (ICH)

Reports to: Cost Branch Head (CTH)

The responsibilities of the ICH are:

a. Review General Responsibilities for all ICS personnel.
b. Collect all cost data.
c. Perform cost effectiveness analyses.
d. Provide incident cost estimates.
e. Make cost savings recommendations.
f. Maintain Unit Log.

15.8.3.2 Cost Recovery Unit Head (CRH)

Reports to: Cost Branch Head (CTH)

The responsibilities of the CRH are:

a. Review General Responsibilities for all ICS personnel.
b. Coordinate with relevant agency/organization on exchange of information with insurers on anticipated costs
c. Ensure all cost documents are accurately prepared.
d. Work with CCH on the preparation of all claims documents
e. Complete all records prior to demobilization.
f. Provide reports to the CTH.
g. Maintain Unit Log.

15.9 COMMAND STAFF

15.9.1 Public Information Unit Head (PIH)

Reports to: National Commander (NC)

The responsibilities of the PIH are:

a. Review General Responsibilities for all ICS personnel.
b. Determine from the NC if there are any limits on information release.
c. Develop material for use in media briefings.

d. Obtain NC approval of media releases.

e. Inform media and conduct media briefings.

f. Arrange for tours and other interviews or briefings that may be required.

g. Obtain media information that may be useful to incident planning.

h. Maintain current information summaries and/or displays on the incident and provide information on the status of the incident to assigned personnel.

i. Ensure that all required agency forms, reports and documents are completed prior to demobilization.

a. Brief Command on PIH issues and concerns.

j. Have debriefing session with the NC prior to demobilization.

k. Maintain Unit Log

15.9.2 Inter-Agency Liaison Unit Head (ILH)

Reports to: National Commander (NC)

The responsibilities of the ILH are:

a. Review General Responsibilities for all ICS personnel.

b. Be a contact point for Agency Representatives involved in the incident.

c. Maintain a list of assisting and cooperating agencies / authorities/ regulatory bodies / governmental departments and their Representatives, including name and contact information.

d. Monitor check-in sheets daily to ensure that all Agency Representatives are identified.

e. Assist in establishing and coordinating inter-agency contacts or inter-organizational contacts.

f. Keep agencies supporting the incident aware of incident status.

g. Monitor incident operations to identify current or potential inter-agency or inter-organisational problems.

h. Participate in planning meetings, providing limitations and capability of assisting agency resources.
i. Coordinate response resource needs for incident investigation activities with the OSH.
j. Coordinate activities of visiting dignitaries.
k. Ensure that all required agency forms, reports and documents are completed prior to demobilization.
l. Brief NC on agency issues and concerns.
m. Have debriefing session with the NC prior to demobilization.
n. Maintain Unit Log.

15.9.3 Legal Unit Head (LGH)

Reports to: National Commander (NC)

The responsibilities of the LGH are:

a. Review General Responsibilities for all ICS personnel.
b. Advise the NC on legal issues.
c. Establish links with the Facility/Vessel owner, government, and other applicable legal representatives.
d. Review documents developed by NC or incident command staff to ensure they meet the legal requirements of participating agencies and organizations.
e. Ensure Incident Command documentation control system is appropriate.
f. Identify what documents and/or information can or cannot be released during the response.
g. Monitor compliance of agreements being used during the response
h. Provide legal expertise during the development of the IAP and other support plans.
i. Work with the HSH to mitigate unsafe practices.

j. Work closely with ILH to help facilitate understanding among stakeholders and special interest groups.
k. Be available to attend press briefings to clarify legal issues.
l. Attend meetings and briefings as appropriate to clarify and help to resolve legal issues
m. Maintain Unit Log.

15.9.4 Intelligence Unit Head (INTH)

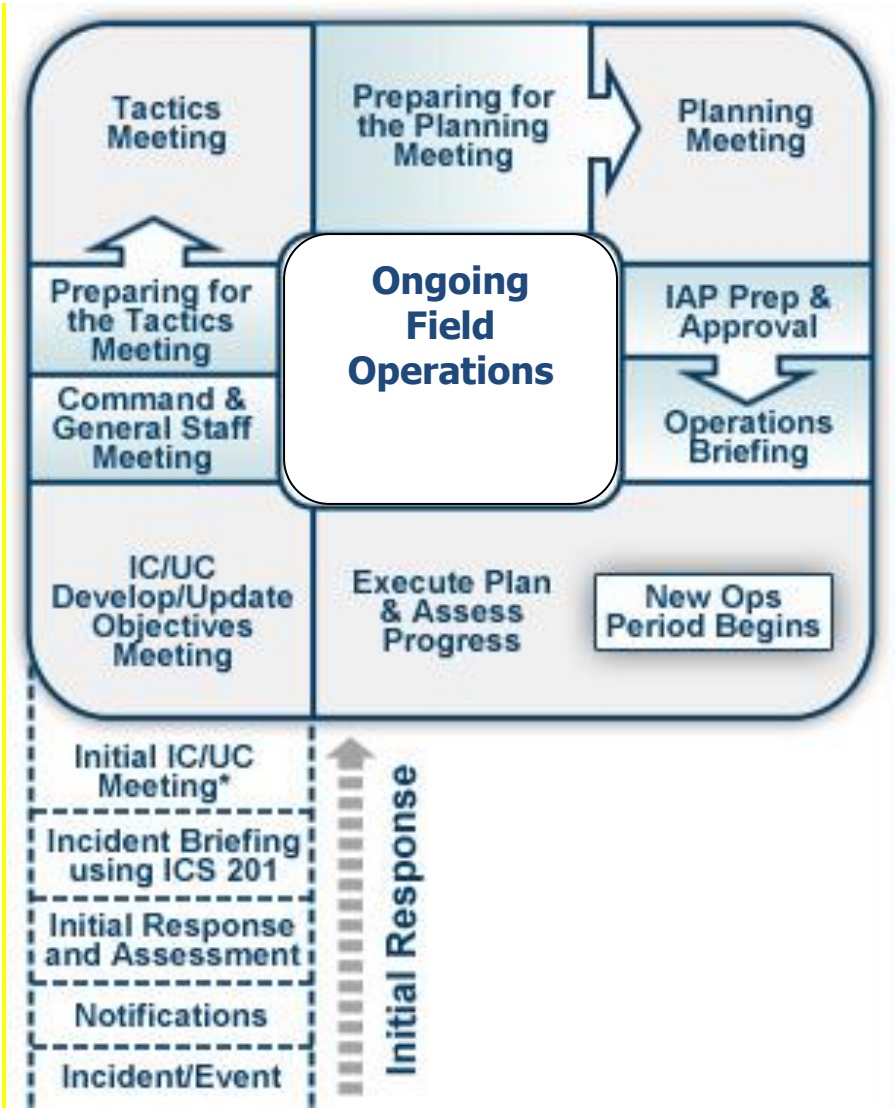
Reports to: National Commander (NC)

The responsibilities of the INTH are:

a. Review Common Responsibilities for all ICS personnel
b. Participate in meetings and briefings as required.
c. Collect and analyze incoming intelligence information from all sources.
d. Determine the applicability, significance, and reliability of incoming intelligence information.
e. As requested, provide intelligence briefings to the NC.
f. Provide intelligence briefings in support of the ICS Planning Cycle.
g. Review the IAP for intelligence implications.
h. Supervise, coordinate, and participate in the collection, analysis, processing, and dissemination of intelligence.
i. Assist in establishing and maintaining systematic, cross-referenced intelligence records and files.
j. Establish liaison with all participating law enforcement agencies and regulatory bodies .
k. Prepare all required intelligence reports and plans.
l. Ensure that all required agency forms, reports and documents are completed prior to demobilization.
m. Have debriefing session with the NC prior to demobilization.
n. Maintain Unit Log.

Figure 15.1

THE PLANNING CYCLE



KEY:

IC = Incident Commander/National Commander
UC = Unified Command
ICS 201 = Incident Briefing Form

16.0 RESPONSE PHILOSOPHY

16.1 The primary objective of a response action in an oil spill incident is to prevent/or **minimize** adverse health and safety, environmental, commercial, or social impacts by the oil spill. Other objectives are to:

- Ensure the safety of response personnel and the public.
- Secure the source of the spillage, if the spill is continuing or threatens to continue.
- Maximize oil recovery at the spill source to the best practical extent
- Contain the spill to the best practical extent, to minimize the area impacted by oil.
- Forecast spill movement and give priority to protecting environmentally, commercially or socially sensitive areas.
- Minimize the overall adverse impacts of the spill and carry out spill mitigation and restorative activities.
- Minimize environmentally induced conflict between Industries and Communities.
- Ensure a balanced decision is made as to when clean up operation should cease.

17.0 RESPONSE OPTIONS

17.1 Fate of Oil

When oil spills occur in water bodies, the primary factors which determine the slick movement are the current and wind; with the current being the most important. In the areas of petroleum activity offshore, the dominant wind is southwesterly, which would by itself tend to move the slick towards the coastline. However, the actual movement of any oil slick can generally be forecast as the resultant vector of current and wind factors calculated according to this simple rule:

Use for the wind vector, in the direction of the wind with a value of 3% of the current speed. Add this vector to the current vector which forecasts the slick movement.

Basically, oils of medium grade will:

(i) evaporate so as to reduce the value by up to 25% in the first few hours

(ii) emulsify over a period in excess of 24-48 hours, thereby forming mousse, increasing in mass by up to 4 times and, at the same time, reducing receptivity to dispersion by chemical dispersant and thereby making it more difficult to clean up.

17.2 Probable Fate of Oil Slicks

Oil when spilled at sea, spreads and moves on the surface and undergoes chemical and physical weathering in the process. Processes such as evaporation, dispersion, dissolution and sedimentation result in the reduction of the quantity oil on the surface of the sea. However, other processes result in the formation of water-in-oil emulsion called mousse which continues to increase in

viscosity making it difficult to disappear and thus persists. The prevailing weather and sea conditions are factors that can promote how quickly the mousse forms aside from type and quantity of oil, which further speeds up this process. Assessment of fate of oil in water reveals that there are basically two types: The non-persistent oil which tends to disappear quickly from water surface, and the persistent oil which takes a longer time to disappear.

Most of Nigerian crude oils fall into the category of light to medium crude, specific gravity 0.80 – 0.85, which converts to API gravities, 35– 45 and 31– 26 respectively. Pour point is about – 5°C and flashpoints range from 187°C to 237°C (in the case of refined products). It follows that any spilled oil would very easily spread on the surface of water thereby aiding quick evaporation of the light ends of the hydrocarbon. The volatility of the oil and availability of ignition sources will determine the fire risk of a spill. The viscosity and characteristics of the oil will affect the ground penetration rate of a land-based spill.

17.3 OIL SPILL RESPONSE OPTIONS

OPTION 1 Monitoring

Ensure effective surveillance by aircraft or satellite facilities if available.

- Put at alert, resources for spraying chemical dispersants and/or mechanical recovery should the need arise.
- Mobilize and put at alert, fire-fighting resources to combat unexpected fires. Identify resources at high risk
- Put at alert, resources for rescue operations should the need arise.
- Alert the NPA to divert traffic as appropriate.

- Maintain an effective communication between the command post and the combating team as well as among its members; and also, between the command post and the national and various zonal response centres.

OPTION 2 Use of Chemical Dispersants

Action shall follow the principles set out hereunder:

- Mobilize and activate resources needed for spraying chemical dispersants (e.g.; dispersants, aircrafts/boats for dispersant spraying).
- Attempt to stop the source of the spill if applicable and possible.
- Forecast spill movement.
- Set out resources for shoreline protection and proceed to deploy booms to protect the shore, and sensitive areas and inshore facilities that might be adversely affected should the spill escape to impact the shore.
- Maintain effective surveillance throughout the spill combat.
- Continue to spray dispersants as necessary up to a satisfactory point.
- Mobilize and put at alert resources for rescue operations.
- Maintain constant communication between the command post and the zonal and national response centres.

OPTION 3 Offshore and Coastal Waters

Action will follow the principles set out here under

- Stop the source of the spill if possible; if not adopt any practicable methods to limit its flow rate and duration.
- Consider the use of dispersants.
- Take steps to contain the slick as close as practicable to its source.

- ❖ Mechanically remove it for proper disposal, using the most appropriate equipment in the stockpile.
- ❖ Forecast slick movement.
- ❖ Proceed to protect such stretches and other proximate inshore facilities or natural features that are considered sensitive.
- ❖ Prepare the beach for receipt of the oil if all other attempts fail and call for further back-up resources for shoreline protection.
- ❖ Consider the option of herding the slick, if allowed by National regulations to a hard packed sandy beach if available and practicable, where it would more easily be picked up.

When the source has been stopped and containment and removal from the water have reached the point where further removal is impracticable, stop operations if the remaining oil is weathered so as not to be dispersible.

Employ practical methods to reduce the probability of fire outbreak. If probability is high, alert and have on standby, fire fighting resources for as long as the threat exists.

If shoreline eventually gets impacted call in NOSDRA to advice on the following:

- ❖ Best methods for shoreline cleanup.
- ❖ What degree of cleanup will best enable the environment to return to its natural state in a reasonable period of time.
- ❖ Have on standby resources for rescue operations, prompt medicare for personnel.
- ❖ Maintain effective communication throughout operations.

OPTION 4 Swamp

Action will follow the principles set out hereunder:

- Stop the source of the spill if possible; if not, take such steps as are available to limit its flow rate and duration.

Concurrent with stopping or limiting the source take steps to:

- Contain the slick as close as practicable to its source
- physically remove it from containment area for proper disposal
- provide back-up protection for areas threatened should oil escape beyond the primary containment.
- In the event that the spill is likely to continue, alert or call out further resources.

If a mangrove swamp is threatened, call in a mangrove expert and attempt to divert the slick away from the swamp for removal using:

- Containment/diverting booms, skimmers, sorbents, and air barriers.
- Boat propellers, air barriers, etc. at main entrances.

If a river or estuary is threatened, deploy booms skimmers and sorbent so as to minimize:

- Impact on the adjoining banks
- Extent of advance up the river or estuary.

Employ practical methods to reduce the probability of a fire outbreak. If the probability of a fire outbreak is high, alert and have on standby fire fighting sources for as long as the threat exists.

Maintain effective communication, and have on standby resources for rescue operations, and promptly alert Medicare personnel and Disaster Management Agency for back up.

OPTION 5 Inland Areas-Land

Action will follow the principle set out below with utmost speed to prevent the oil from seeping into the ground.

- Stop the source of the spill if possible, if not take such steps as are available to limit its flow rate and duration.
- Employ the use of readily available materials to build barriers or dams around the oil spill, (use hand shovels for small barriers and earth moving equipment for large ones).
- Use natural contours to facilitate containment and to determine where best to establish collection points.
- Dig ditches as collection points if necessary, adding water before the arrival of the oil to prevent seepage.
- Consider as very high priority, mobilization of fire fighting resources.

If oil has seeped into the ground adopt the principles of recovery of oil from underground, viz.:

- Adopt the techniques of land farming if penetration is not deep
- If large quantities have seeped underground, use earth moving equipment to remove soil
- If oil has begun to migrate underground, determine where it is by use of test wells and sample pits for systematic approach to recovery.
- If oil has reached the water table adopt the appropriate geophysical methods of recovery of oil from a contaminated aquifer.
- Provide alternative clean water for communities likely to be affected by the oil spill.

OPTION 6 Inland Areas-Fresh-Water

Action will follow the principles set out below with maximum speed to prevent oil from contaminating large expanse of inland freshwater bodies.

❖ Stop the source of the spill if possible; if not, take such actions as are available to limit its flow and duration.

❖ Contain the slick as much as practicable to its source.

❖ Commerce immediate cleanup by mechanical methods only, and physically remove it for disposal.

❖ Take immediate steps to remedy and substitute for whatever socio-economic imbalance caused to any human community by the incidence of the spillage.

❖ Ensure continuous cleanup and restorative exercise until optimum results are achieved.

OPTION 7 Other Situations

❖ Distressed Cargo Ship

If the ship has run aground, re-float the ship by adopting the principles of any of the following techniques:

- lightening
- use of tug boats
- pulling by beach gear

If the ship's tank(s) is/are ruptured, take steps to transfer the cargo to another ship. Always make readily available, resources for option (1) and/or (2) as the situation demands.

❖ Large Scale Underground Seepage of Oil

See Options 5 and 6 (which deal with spills in Inland Water Areas)

❖ In Situ Burning - permission must be obtained in advance from the Zonal Commander.

17.4 Oil Spill Accompanied By Fires

Primarily evacuate personnel and valuable resources from scene of fire. Call in the fire service. If the fire is of a nature that the conventional service set-up cannot handle, call in technical experts from outside the country (e.g. Red Adair) to quench the fire.

17.5 Regional and International Cooperation

The Contingency Plan recognizes the need for cooperation among member states of the West African sub-region, especially our immediate neighbours, in the Gulf of Guinea, for combating oil pollution in our contiguous waters. The plan supports IMO's strategy for the protection of the marine environment, and in particular will seek to strengthen the capacity for national and regional action to **prevent, control, combat** and **mitigate marine pollution** and to promote technical cooperation to this end. The plan will also promote cooperation fully with other organizations within the United Nations and relevant international, regional and non-governmental organizations to ensure a coordinated approach to the problem and avoid wasteful duplication of efforts. Specifically this National plan will request assistance such as advisory services, technical support and equipment in accordance with applicable bilateral and international agreements for the purpose of responding to an oil pollution incident. When the severity of such incident so justifies, the National Commander will ask the International Maritime Organization to assist in selecting sources of provisional financing of the costs of responding to the oil spill incident.

The Director General (NOSDRA) could also take necessary legal or administrative measures to facilitate:

- The arrival and utilization in and departure from Nigeria of ships, aircrafts and other modes of transport engaged in responding to an oil pollution incident or transporting personnel, cargoes, materials, and equipment required to deal with such an incident, and,
- The expeditious movement into, through, and out of Nigeria, of personnel, cargoes, material and equipment.

Currently, Nigeria is a signatory to relevant international agreements such as:

❖ 1969 International Convention on Civil Liability of oil pollution damage.

❖ 1971 International Convention on the Establishment of International Fund for Compensation for Oil Pollution Damage.

❖ 1972 Convention on the prevention of Marine Pollution by the Dumping of wastes and other matter (ratified in 1977).

❖ International Convention for the prevention of Pollution from ships, 1973, as modified by the protocol of 1978.

❖ Convention for cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (signed 23 March, 1981).

❖ 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (signed March 1990).

❖ 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation.

This plan will form the basis for the preparation and implementation of regional and sub-regional plans for combating inter-boundary oil spills.

18.0 RESOURCE AVAILABILITY

It is important also to bear in mind that in the event of an oil spill incident, speed is the factor that can save lives and protect valuable assets. The difference in time of notification and the time spent in mobilizing and deployment of response equipment hold the ace for cost-effective response mechanism in any response plan.

Consequently, an INVENTORY of all available oil spill response equipment and necessary logistic supplies in the event of an oil spill emergency would be a routine exercise that is regularly updated at all the levels of response activities. The inventory list of equipment would include delineated locations, quantity, as well as other logistics information such as the methods of transportation and delivery periods, financial implications, names and communication particulars of contact points/persons.

18.1 Primary Spill Response Equipment: Inspection, Maintenance and Testing

Regular **operational audits,** including the inspection of equipment and the procedures for deployment, as well as periodic testing will be mandatory for all response levels. The occurrence of these operational audits will not be restricted to coincide with drills or desktop exercises.

Table 5

MINIMUM REQUIREMENT for OIL SPILL RESPONSE EQUIPMENTS

This list is not exhaustive and will be regularly updated by NOSDRA

SAFETY

- PPEs
- Area gas monitor
- Personal gas monitor
- Communication Gadgets
- Fire fighting hydrants
- First Aid kit

TRANSFER PUMPS

- Peristaltic pump
- Spate pump
- DOP 160
- DOP 250
- Framo pump systems
- Inline Hydraulic pump
- Spate 75D
- Spate 75C
- Honda Pump
- Spate 100D
- Lombadini
- German Rupp Pump (4")
- German Rupp Pump (3")

DISPERSANT APPLICATION SYSTEMS

- ADDS Pack
- NIMBUS
- Helibucket
- Simplex
- Boat Sprays
- Fluorometer

BOOMS

- Weir boom system
- Ro Skim system
- Harbour Buster
- Kepner Reel Pac
- Sentinel Boom Reel
- Shore Guardian
- 8" Permanent Floatation
- Flexi Boom
- Wire Tension
- Nofi Vee Sweep
- Ro boom
- Hi Sprint
- Harbour Buster
- Sea Sentinel Boom
- Troil Boom
- Sea Curtain
- Boom Vane

TEMPORARY STORAGE EQUIPMENT

- Inflatable Barges
- Oil bags
- Fastanks
- Waste Containment tanks
- Floating Storage Barge (100 barrels)

ANCILLARY EQUIPMENT

- High pressure washer
- Hydraulic pressure washer
- 6x6 wheel vehicle
- Portable shelters

RECOVERY DEVICES

- Mop skimmer
- Disc skimmer, capacity 40 tonnes / hour
- Disc skimmer, capacity 20 tonnes / hour

- Disc skimmer, capacity 12 tonnes / hour
- Disc skimmer, capacity 7 tonnes / hour
- Elastec groove drum skimmer
- Mini vacuum skimmer
- Vacuum skimmer
- Weir skimmer, capacity 70 tonnes / hour
- Weir skimmer, capacity 45 tonnes / hour
- Weir skimmer, capacity 30 tonnes / hour
- Termite combination skimmer
- Terminator combination skimmer
- Foilex brush and weir skimmer
- WP130
- Rotodrum
- Sea devil
- Helix

BOATS/VESSELS

- Inflatable boats
- RIB's
- Work boat (Peter David)
- Work boat (EARLY Boats)
- EARL vessels
- Flat-bottomed (Tow Boat)
- Yahama 115
- Mercury 115
- Yanmar Diesel 36
- Yamaha 85
- OILED WILDLIFE RESPONSE
- Wildlife Response pallets

Table 6

TIER 3

NIGERIAN NAVY
MARINE OIL SPILL OPERATIONS COMMAND
OIL SPILL RESPONSE EQUIPMENT

To be determined by the Nigerian Navy in accordance with the Command's Mission and related National Security Concerns.

Restricted and strictly confidential

Table 7

TIER 3

NIGERIAN AIRFORCE
AIRBORNE OIL SPILL OPERATIONS COMMAND
OIL SPILL RESPONSE EQUIPMENT

To be determined by the Nigerian Air Force in accordance with the Command's Mission and related National Security Concerns.

Restricted and strictly confidential

Table 8

TIER 2

CNA OIL SPILL RESPONSE EQUIPMENT SPECIFICATIONS

(Revision based upon 1993 OPTS approved Upgrade)

Table 9

TIER 1

PETROLEUM INDUSTRY OIL SPILL RESPONSE EQUIPMENT

- As specified in Individual Company Oil Spill Contingency Plans (OSCPs)
- Will be regularly Audited and Tested by appropriate Zonal Commands

19.0 COMMUNICATION

19.1 The need for an effective communication network in an oil spill contingency plan cannot be overemphasized. Indeed, it is the hub on which all other components of a plan rotate.

19.2 Communication in respect of an oil spill contingency plan can be defined as "means of communicating, placing orders or directives as well as receiving information to and from those under command and control". For success to be achieved therefore, an effective communication network must as a matter of utmost priority and a pre-requisite, be put in place.

19.3 Usually, an oil spill situation will be much more effectively managed from a Response Command and Control Centre. This Plan's organization specifies that such centres will exist both in NOSDRA National and Zonal Headquarters, which will be linked to the On-scene Commander at any spill site.

19.4 In communications, a uniform language and previously agreed terms as documented and adopted in this plan shall be used among all the tiers of oil spill contingency plans in this country to avoid critical situations and misunderstandings. The communication/emergency control centre shall have internal/external telephone installed; one of which at least shall have access to the international network and separate from the normal switchboard. There shall also be long range radio communication equipment at all centres. The radio network shall also have frequencies common to all the tiers of the plan, and specific frequencies shall be allocated and dedicated to oil spill

contingency planning. Among the frequencies, at least one shall be set aside to take priority over all others when in use.

19.5 There shall also be radio handsets, (which can hook into the switchboard at the Centre), mobile phones, fax, telex and E-mail facilities. For security, a portable satellite communication system will be required.

20.0 RESPONSIBILITY FOR TERMINATING THE RESPONSE

20.1 It is important to describe the responsibilities and process for terminating the response and transitioning into recovery. The termination criteria help to define the end-point of the response as well as determine when diminishing returns mean no further improvement to environmental outcomes. The decision to terminate a response shall be taken by the National Commander in consultation with the National Strategic Committee.

20.2 As a standard practice, the decision to stop active clean up is taken when efforts are not returning any tangible environmental and cost benefit; however this rarely occurs at the same time for all components of any response, hence some Sections/Units of the incident command system will be reduced in size, or demobilised, earlier than others.

20.3 The termination of clean-up activities shall be in two phases namely initial/partial and final/optimal:

a. Initial/Partial Termination of Operations- This indicates the standing down and withdrawal from the scene of the incident of oil spill combating equipment. The decision for this will be taken when the acceptable level of clean-up has been achieved and approved by National Commander. The acceptable level of clean up shall also include the final processing and disposal of oil and debris as the case maybe; and

b. Final/Optimal Termination of Operations- This can only be made if the following regulatory conditions are satisfied:

   i. For all waters, there shall be no visible oil sheen after the first 30 days of the occurrence of the spill, no matter the extent of spill;

ii. There shall not be any trace of oil in sediments after the first 45 days of occurrence of incident; and
iii. The target allowable limit for oil content of the soil shall not be more than 50mg/kg.

20.3.1 Planning and Operations

The size of Planning and Operations Sections is interdependent and Planning requirements will tend to decline as the Operations Section Units cease activity.

20.3.2 Marine and Airborne Response Operations

Marine and Airborne Operations teams may be deactivated when:

a. All oil has been recovered; or
b. The oil slick has dissipated; or
c. All oil has impacted shorelines and is unlikely to be refloated (some resources may remain on standby until shoreline response has been terminated); or
d. The oil slick has gone far offshore and is beyond the range of response options; and
e. The oil slick is unlikely to return.

20.3.3 Swamp/Land Response Operations

The teams may be deactivated when:

a. All accessible shorelines are clean (i.e. free of oil);
b. Cleanup is having no further net beneficial effect;
c. Cleanup is having a net deleterious effect on the shoreline or associated fauna and flora; and
d. The extent and degree of remaining oil is judged to be acceptable or as having little or no actual or potential adverse effects.

20.4 Standing-down of Equipment

At the initial/partial termination of the clean-up activities, all equipment mobilized and/or deployed shall be demobilized, cleaned, repaired and withdrawn from the spill site and stored appropriately. All rented equipment/oil spill tools in agreement with existing contractual arrangements, shall be returned and consumables re-ordered. It should however be noted that such stored equipment can be deployed at short notice for any residual oil between the initial/partial and optimal termination periods.

20.5 Post-Impact Study/Monitoring Activity

A post-impact study/monitoring activity for restorative purposes will therefore be conducted for any significant oil spill incident by the responsible party with the supervision of NOSDRA.

20.6 Post-Mortem Review of Activation Procedures/Formal Reports Preparation

A post-mortem evaluation of the activities shall be undertaken. Such evaluations will be conducted few days after the operations (oil spill clean-up activities)/activation, firstly by individual section chiefs and their sub-ordinates and then by the sectional Chiefs and the National Commander. These evaluations could help update any review of the procedures in the NOSCP for better co-ordination of further potential response actions that will guarantee environmental conservation.

21.0 DISPOSAL OF RECOVERED OIL AND OILY WASTES

21.1 Oil recovered from water is likely to contain large amounts of water present as an emulsion. That recovered from shoreline, land spills, swamps etc. most probably would contain debris, solids, etc. It therefore follows that there shall be optional methods of treatment and disposal depending on the nature of the recovered oil and oily debris.

21.2 The disposal methods to be considered for oily wastes recovered should include but not limited to processing through a production facility, incineration and land treatment (land farming composting etc.), and reutilization. Prior to the various disposal methods mentioned herein, every effort shall be made to recover the spilled oil as much as possible.

21.3 It shall be the responsibility of the National Oil Spill Detection & Response Agency (NOSDRA) to ensure the appropriate treatment and safe disposal of waste oil/oily debris, in an environmentally sound manner.

22.0 RESTORATION AND POST-SPILL MONITORING

22.1 For all major spills, efforts must be made to restore or at least rehabilitate the impacted area to its original condition through inspection and certification process. The decision to initiate clean-up and restoration of oil-contaminated areas should be based on careful evaluation of socio-economic, aesthetic and ecological factors. Criteria of importance to this decision are environmental sensitivity, behavior of the oil in impacted areas, ecosystem protection, and restoration methods.

The probability of a successful restoration should be considered in line with the following:-

- Inspection and certification process shall be initiated and coordinated by NOSDRA in all cases listed below.
- Sampling and analysis of the natural resources of the contaminated areas to determine if natural recovery or restoration is the best course of action;
- If natural recovery is acceptable, an inspection and compliance Monitoring programme is initiated while the recovery program proceeds.
- If restoration is necessary, field operations are started and followed by a compliance monitoring program under the coordination of NOSDRA.

The evaluation of oil-impacted areas should consider the general qualities expressed both in physical terms e.g. sand, mud, rock, etc. and in terms of their resource value e.g. amenity, recreational, ecological, commercial and inshore fisheries etc. The assessment of natural recovery or need for restoration should also examine the time frame for such recovery or assisted recovery where necessary.

22.2 Shoreline Restoration

The most acceptable methods for clean-up and subsequent restoration of an area depend on the type of shoreline affected the nature of its economic and biological resources.

Restoration activities for such environments may involve chemical and hydraulic dispersion; steam cleaning and sandblasting; substrate mixing and/or removal of oil and contaminated materials/debris. NOSDRA shall certify the restoration of the impacted area.

22.3 Land Spills

The most effective restoration techniques often include addition of nutrients, aeration, maintenance of a neutral soil pH, tillage or mixing to break surface crusts and in very wet sites some form of drainage to remove excess water. The restoration of land sites (onshore) could be hastened by introducing micro-organism capable of degrading residual traces of oil which will otherwise take several years to degrade under natural conditions. Such restoration should only involve proven microbes in bioremediation techniques that also offer suitable growth conditions for plants and animals. For most marshlands/wetlands, transplanting of seedling plants and seeding are conventional techniques, which could be employed.

The post-spill monitoring programme would often involve visual observation, photographic documentation, and intensive scientific investigation where found necessary. A knowledge of pre-spill conditions is often invaluable for evaluation of other data relevant to the impact of oil spill. Such baseline data enable accurate evaluation and help establish a suitable monitoring programme for detailing recovery rates. The approach to, and spirit of intensive scientific study is essentially ecological. Limitations in time, manpower, equipment and funds seldom permit the utilization of numerous quantitative and experimental methods characteristic of modern ecology.

The present procedure is one in which information is derived from ecological surveys or reconnaissance as to the role of different factors in determining the impact of oil. These factors should include the role of clean-up techniques and an appraisal of the role of other pollutant sources, if any for an overall evaluation of the impact of spilled oil. The monitoring program should have a framework incorporating a monitoring schedule once the specific sites of study have been chosen. A description of the local condition, population data, identification of locally important plants/organisms, and analysis of samples of water, sediment and organisms (e.g. fish) for contaminant levels could then proceed using standard methodology.

Attempts should be made to determine the "Mass-balance" of the oil spilled. Such an exercise details the fate and distribution of oil. It can assist in defining which ecological compartment would be most vulnerable. It may also be used to stipulate future clean-up methods and identify precautions to be taken to minimize the impact of spilled oil.

23.0 IMPORTANT NTERNATIONAL AUTHORITIES

International Tankers Owners Pollution Federation Ltd. (ITOPF)
1 Oliver's Yard
55 City Road
London
EC1Y 1HQ
Tel: +44 (0)20 7566 6999
Emergency Tel: +44 (0)7623 984 606 (24hr)
Fax: +44 (0)20 7566 6950
email: central@itopf.com

International Maritime Organization (IMO)
4, Albert Embankment London SEI 7SR
Tel: + 44 207 735 7611
Fax: + 44 207 587 3210
email: info@imo.org

Oil Spill Response Ltd. (OSRL)
Head Office
One Great Cumberland Place
London, W1H 7AL
United Kingdom
Tel: + 44 (0)20 7724 0102
Fax: + 44 (0)20 7724 0103
email: london@oilspillresponse.com

Southampton Office
Lower William Street
Southampton SO14 SQE
Tel: + 44 1703 331551
Fax: + 44 1703 331972

International Oil Pollution Compensation Funds
23rd Floor
Portland House
Bressenden Place
London
SW1E 5PN
United Kingdom
Tel: + 44 (0)20 7592 7100
Fax: + 44 (0)20 7592 7111
email (for all enquiries): info@iopcfund.org

24.0 MEDIA

24.1 A Public Information Officer shall be appointed to co-ordinate and disseminate information and data during response to an oil spill incident.

25.0 OIL SPILL COMPENSATION REGIME*

25.1 The oil spill compensation regime provides guidance on procedures and requirements for assessment of damage as a result of oil spill within Nigeria. The Polluter-Pays-Principle is the underlining protocol for application of compensation to damages, personal or real estate properties arising from oil spill.

25.2 Assessment of Oil Spill Damage for Compensation Claims

a. Role of National Oil Spill Detection and Response Agency (NOSDRA)

The Agency will play key role in:

i. coordinating the determination of the precise extent and severity of ecological injury, third party property damage and or economic loss from the oil spill;
ii. providing regulations, guidelines, standards and rates for the assessment of claims and review them from time to time;
iii. informing, in a transparent and scientifically credible manner, all relevant stakeholders including the injured parties of the extent of the environmental damage from the oil spill;
iv. driving Joint Investigation Visit (JIV) and Damage Assessment Visit (DAV) by composing the appropriate JIV and DAV teams respectively; and
v. appointing, in line with Polluter-Pays-Principle, appropriate professional to determine the numerical value of damaged property as well as provide professional judgment regarding the financial compensation attributable to the social cost to the impacted party.

b. a Claimant

The Claimant is required to:

i. prove a reasonable degree of proximity between the contamination and the loss or damage;
ii. allow the Responsible Party and its representatives unfettered access to records and other evidence and co-operate with their enquiries in an open manner;
iii. comply with the NOSDRA's JIV and DAV Reports as well as the guidelines on the admissibility of various classes of claims;
iv. ensure good records are kept and comply with provisions on claims presentation and the provision of supporting evidence (where available);
v. provide proof of damage to identifiable items; and
vi. provide documentary evidence for previous streams of income from the resource for which he wishes to make a claim.

25.3 Claims Settlement Procedure

It is expected that anyone who has suffered oil pollution damage will make a claim against the polluter for compensation. A claimant is required to submit his/her claims directly to the Responsible Party and the Agency simultaneously, within a reasonable time after the damage has occurred.

a. Procedure for Presenting a Claim

It is appropriate that any claim against the polluter should be presented clearly and with sufficient detail in writing (including electronic mail). Furthermore, each item of a claim should be substantiated by an invoice or other relevant supporting documentation.

b. Information That a Claim Should Contain

It is expected that each claim should contain the following minimum content:

i. Contact details of the claimant, and of any representative;
ii. Date, place and specific details of the incident;

iii. Identity of the facility involved in the incident; and

iv. Type of damage sustained.

c. Claims Payment

On conclusion of all legal requirements, the claimant shall be paid by appropriate instrument while NOSDRA witnesses the payment protocols. For proper claims administration, NOSDRA requires that all payment documentations should be forwarded. In an event of disagreement, the Agency should be promptly notified.

*(Adopted and modified from International Oil Pollution Compensation (IOPC) Claims Manual)

26.0 FUNDING

26.1 It is proposed that the funds for the establishment and the continual update and maintenance of the Plan be derived from the Ecological Fund or from a newly established National Environmental Fund. Costs incurred in a spill combat shall however, be recovered from the spiller in accordance with the "Polluter Pays Principle." For the operational logistics towards the implementation of NOSCP (Tier 3), all relevant Ministries/Agencies directly concerned shall participate in the funding arrangement.

27.0 TRAINING AND EXERCISES

27.1 Simulations

Crisis Management Training can be obtained using simulators designed/customized for training response personnel. Simulators can also double as command and control centre for co-ordinating emergency operations. When response personnel are trained on such interactive simulator, they can be exposed to other spill management systems including:-

- ❖ Realistic Oil Spill Plans
- ❖ Economic and Environmental Sensitive Area Maps
- ❖ Effective Collective, Remediation and Disposal Techniques
- ❖ State-of-art Booms Deployment and Containment and Restoration Techniques.

It shall be mandatory that each member of the response team and any other relevant personnel shall be required to possess knowledge and experience on emergency as demanded in the Plan.

To ensure effective performance by the respective individuals, the training of personnel shall be structured in order that all trainees come to understand the basics of oil spill management such as:

- ❖ Understanding the nature and characteristics of oil pollution, its fate and effects on land, water and air.
- ❖ Understanding the mechanics of slick movement and ambient factors
- ❖ Identification of potential spill sites and proactive measures
- ❖ Preventive measures and maintenance of equipment
- ❖ The various causes of an oil spill
- ❖ Different control measures and response and counter strategies
- ❖ Identification of environmentally sensitive areas/facilities

- ❖ Use of different types of equipment, including chemical dispersants
- ❖ Oil spill trajectory modelling and other Environmental Impact Prediction Modelling Techniques
- ❖ Use of E.S.I maps, and Geographic Information System (GIS)
- ❖ Application and use of satellite imagery for spill detection and combat
- ❖ Familiar with Resource Procurement and Tracking
- ❖ Understand the role of on-the scene commander in response activities

27.2 Continuous Training

Recognizing that contingency planning becomes effective with adequate continuous training, this plan makes for:-

- ❖ Operator Training: Continuous Hands-on training shall be conducted for all operators (full time and/or casuals) in the use of spill response equipment and materials once every quarter.
- ❖ Workshops for On-Scene Coordinators: These workshops shall be organized for all zonal commanders and any other personnel deemed fit by the responsible authorities at least half yearly. And the workshops shall provide effective forum for what is considered to be the most important of pollution response training functions. The duration shall be one week and the emphasis shall be on principles of oil spill management.
- ❖ Mock Drills: Drills should be major and at least once a year, for real and desktop scenarios.
- ❖ Communications and Organization Exercises:

Periodically, communications and organization exercise shall be held to test the resources of a zone or all zones including the national

center. Also, these exercises shall be expanded to include the first and second-tier levels, and if deemed necessary by the National Commander, the international bodies as well.

27.3 Drills/Field Exercises

Efficiency of certain specialized equipment shall be evaluated through drills/field exercises. The drill is considered the backbone of any successful contingency plan. It is only then that real time assessment of the available resources (equipment) can be matched with the set objectives. Through this exercise, it will be possible to identify if additional resources (equipment and manpower) will be required in the future. Procurement of additional resources are based on this evaluation process also.

27.4 List of Mandatory Accredited Courses for Oil Spill Response Training*

27.4.1 First Line Responders/Beachmasters/Site Supervisors

- Basic Health Safety and Environment (HSE)
- Shoreline Cleanup Assessment Technique (SCAT)
- Oil Spill Operator
- Beachmaster/Site Supervisor
- Incident Command System (ICS) 100 & 200
- Dispersant Awareness and Monitoring Workshop
- Oil Spill Refresher (within 36 months of the original course)**
- 40Hr HAZWOPER for Marine and Inland Waterways
- 40Hr HAZWOPER Hazardous Waste and Emergency Response
- 8Hr HAZWOPER Refresher

27.4.2 HSE Managers/Environmentalists/On-scene Commanders/ Emergency Response Team

- Basic Health Safety and Environment (HSE)

- Advanced HSE
- Shoreline Cleanup Assessment Technique (SCAT)
- Environmental Advisor's Field Course
- Incident Command System (ICS) 100, 200 & 300
- Oil Spill Clearance
- IMO Model Training
- Dispersant Awareness and Monitoring Workshop
- Oil Spill Refresher (within 36 months of the original course)**
- 40Hr HAZWOPER for Marine and Inland Waterways
- Oil Spill Response Strategies and Tactics
- 40Hr HAZWOPER Hazardous Waste and Emergency Response
- 8Hr HAZWOPER Refresher
- GIS/GPS for Environmental Spill Response

27.4.3 Managers/Incident Commanders

- Oil Spill Management Workshop
- ICS 300
- Dispersant Awareness and Monitoring Workshop
- Oil Spill Refresher (within 36 months of the original course)**
- 40Hr HAZWOPER for Marine and Inland Waterways
- Oil Spill Response Strategies and Tactics
- 40Hr HAZWOPER Hazardous Waste and Emergency Response
- 8Hr HAZWOPER Refresher

* Each Industry Operator is at liberty to provide additionally training courses. Nevertheless, it is strongly recommended that such training should have the needed certification as well as delivered by accredited course providers.

It is important to mention that all oil companies are required to train first line responders selected from their host communities on basic oil spill response techniques as part of oil spill preparedness.

** Oil Spill Refresher course is mandatory in order for individuals to retain their certification otherwise they will need to retake the original course.

28.0RECORDS

28.1 A NOSDRA Officer shall be designated to document all response activities at the various levels.

29.0 REVIEW AND REVISION

29.1 As a matter of policy, this plan shall be reviewed every two years. However, the Director General shall ensure that an immediate update is effected should there be a need for such reviews.

ANNEX 1

APPROVAL FORM FOR DISPERSANT USE

A. APPROVAL FOR CHEMICAL DISPERSANT USE

Approval for the use of dispersant is granted by the National Oil Spill Detection and Response Agency (NOSDRA) prior to use in offshore operations only.

B. USE OF CHEMICAL DISPERSANT

The approved chemical dispersants can only be used in the offshore. No dispersant may be used in the inland areas or within 10 Nautical miles from shoreline.

National Oil Spill Detection & Response Agency

FORM D
REQUEST FOR USE OF DISPERSANT

1.GENERAL INFORMATION:

i. Company Name:

ii. Incident Details:-	Date of Incidence (dd/mm/yy)	Time of Incidence (24h standard/daylight)	Date of Observation (dd/mm/yy)	Time of Observation (24h standard/daylight)
iii. Spill Reference No:		hrs to hrs		hrs to hrs

iv. Estimated quantity spilled:

2. SITE DETAILS

i. Site Name: OML:

ii. GPS FIELD POINTS Total Length _____m Length Surveyed_____ m Differential GPS Yes/No

Spill Start Point GPS: EASTINGS _____meters NOTHINGS _____meters

Spill End Point GPS: EASTINGS _____meters NOTHINGS _____meters

iii. water depth _____meters

3. OIL CHARACTERISTICS/PROPERTIES

i. API Number _____ iii. Viscocity _____

ii. Pourpoint _____ iv. Others _____

4. DISPERSANT INFORMATION

i. Name _____ iv. Type/class _____

ii. Estimated Quantity needed _____gallons/litres v. Quantity available _____gallons/litres

iii. Proposed Application Method _____

5. WEATHER INFORMATION

i. Wind speed & direction _____ knots_____ iv. Visibility _____

ii. Sea state _____

iii. Air temperature _____^{o}C/^{o}F v. sea temperature _____^{o}C/^{o}F

6. SOCIO-ENVIRONMENTAL CONSIDERATIONS

i. Properties at Risk

☐ Fisheries ☐ Aquatic Fauna and Flora ☐ Mangrove Swamp ☐

☐ Avian Colonies ☐ Others (Specify).....

Request filed by
NAME: .....

DESIGNATION: ..... **CONTACT TEL. NO**: .....

SIGNATURE: ..... **DATE:** .....

FOR OFFICIAL USE:
Dispersant Use Approved ☐ Dispersant Use Not Approved ☐

Remarks .....

.....

NATIONAL COMMANDER/ALTERNATE: .....

SIGNATURE: ..... **DATE:** .....

National Oil Spill Detection & Response Agency

FORM E
DISPERSANT MONITORING LOG

1.GENERAL INFORMATION:

v. Company Name:

vi. Incident Details:- / vii. Spill Reference No:	Date of Incidence (dd/mm/yy)	Time of Incidence (24h standard/daylight) hrs to hrs	Date of Observation (dd/mm/yy)	Time of Observation (24h standard/daylight) hrs to hrs

viii. Product Spilled:
ix. Estimated quantity spilled:
x. Dispersant Used:

2. SITE DETAILS

Site Name: OML:

3. WEATHER INFORMATION

iv. Windspeed
v. Visibility
vi. Sea state
vii. Air temperature
viii. Sea temperature

ACTIVITY LOG

Time	**Actions/Events**
	1.Location/ Time
	2. Perceived Effectiveness
	3. Operations
	4. Sensitivities

LOGGING OFFICER: .....

DESIGNATION: .....**CONTACT TEL. NO**: .....

SIGNATURE: ..... **DATE:** .....

**Kindly attach relevant photographs and charts.*

ANNEX 2

LIST OF APPROVED DISPERSANTS FOR USE IN NIGERIA

S/N	Product Name	Manufacturer	Remarks
1	Gold Crew dispersant OSD-A001	Gold Crew Products & Services, LLC P.O. Box 12032 Orange, CA 92859 Tel:(714) 288-8781 Fax: (714) 288-8730 **www.goldcrew.net** Environmental Chemical Solutions P.O. Box 2029 Gig Harbour, WA 98335 **www.ecschem.com** Tel:(253)8531330 Fax:(253)8531340	
2	Inipol IP 90	ARKEMA Group, 89 Boulevard National Cedex F-92257 La Garenne Colombes, France +33(0)1 49 00 38 00, +33(0)1 49 00 38 01 **www.ceca.fr**	
3	Agma OSD 559	Agma Plc Gemini Works, Haltwhistle Northumberland NE49 9HA **www.agma.co.uk** Tel: 01434320598 **enquiries@agma.co.uk**	**Agma OSD 559 is obsolete** Current products: Agma OSD 569 Agma DR 379
4	SW Sc1000	GEMTEK® Products 3808 North 28th Avenue Phoenix, AZ 85017 Tel: (800) 331-7022 Fax:(602) 265-724 techsupport@infogemtek.com	
5	Emulsol LW	Arrow Cleaning and hygiene solutions, rawdon road, Derbyshire DE12 6DA Tel: +441283221044, +447778505330	Beach Cleaner
6	Surflow OW.1	INIST-CNRS 2, Allée du Parc de Brabois CS 10310 Cedex F-54519 Vandoeuvre-lès-Nancy, France +33(0)383504664, +33(0)383504666	
	Superall 38	Superall Products LLP 22215 Tuwa Road Tomball, Texas 77375	

7		Tel: (281) 351-4800, Fax: (281) 351-4855	
8	Slickgone LTE	Dasic International Ltd, Winchester Hill Romsey Hampshire, SO51 7YD **www.dasicinter.com** Tel: +441794512419 +441794522346	**Slickgone LTE** is obsolete Current products: Slickgone LTSW Slickgone NS Slickgone EW
9	Gamlen OSR 2000		
10	SWOSH H.O.D Dispersant		
11	Petrolite W2096	Baker Petrolite Kirkby Bank Road, Knowsley Industrial Park, Liverpool L337SY **www.bakerpetrolite.com**	
12	COREXIT® EC9527A EC9500A EC 7664 EC8667	Nalco Environmental Solutions LLC 7705 Highway 90-A Sugar Land, Texas 77478 Tel: (281) 263-7709 (832) 851-5164	EC9527A (formerly COREXIT 9527) EC9500A(formerly COREXIT 9500)
13	BP 1110 WD BP 1100X	BP Singapore Pte ltd 1 Harbour Front Avenue, Keppel Bay Towers #02-01 Singapore Tel: +6563718888, +6563718855	BP 1100X, a Type 1dispersant is banned in some countries
14	Dispolene 36S		
15	Servo CD 2000	Servo Singapore, 10 kaki Bukit Road, 1KB Industrial Building #01-30, Singapore Tel:+6568440288	
16	Naxchem Dispersant		
17	Formula 98		
18	Chemiclene 'A'		
19	Kensol D.A.C Oil Spill degreaser		
20	Oil spill Removal W.S.A		
21	EBB Clean dispersant		
22	Chemisphere 32		
23	Shell Lty		
24	Shell Dispersant LTX		

ANNEX 3

LIST OF NOSDRA – APPROVED OIL SPILL CLEAN UP CHEMICALS

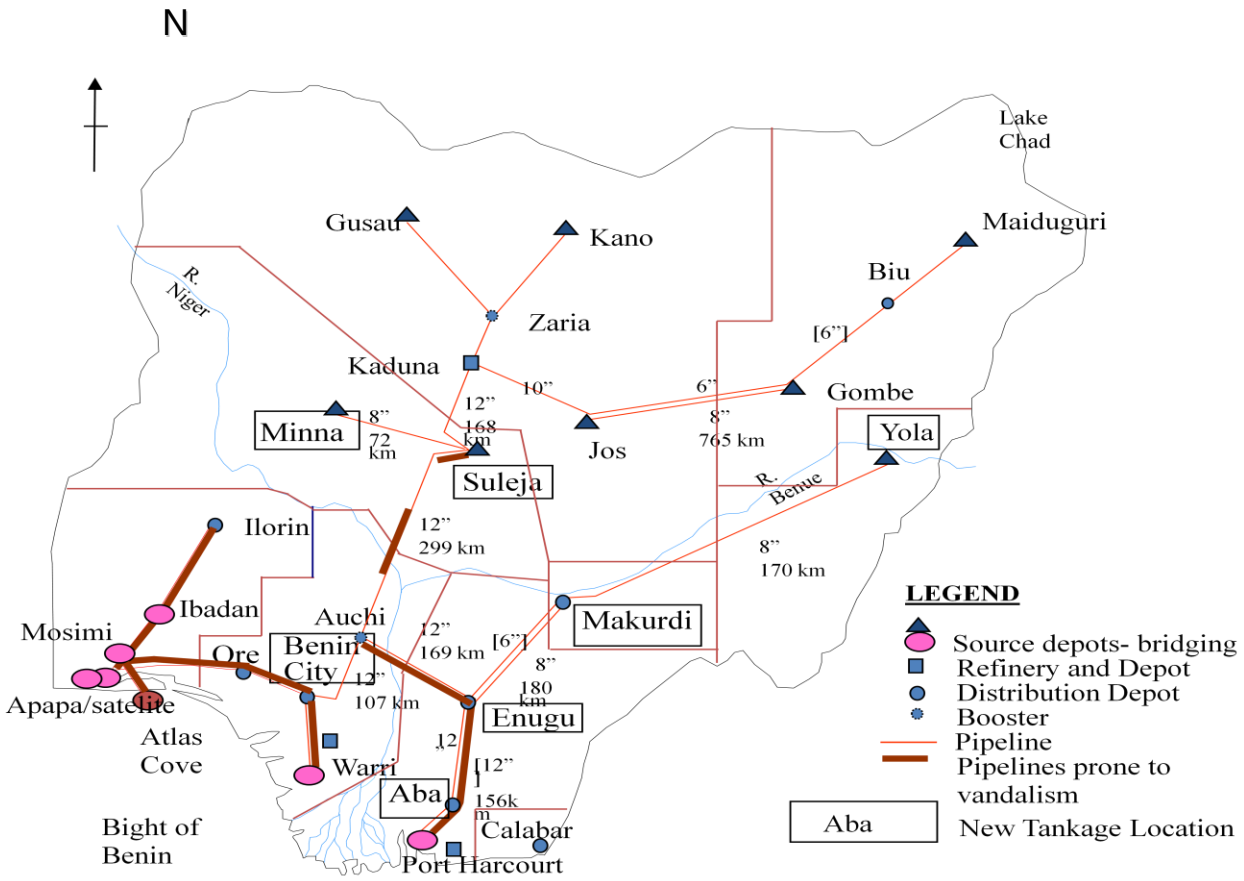
S/N	Product Name	Manufacturer	Remark
1	Bio Enzyme	**Bio-Systems Corporation Ltd.** **Address**: Unit F1, Kings Drive, Kingmoor Park South, Carlisle, Cumbria, CA6 4RD, UK **Website:** http://www.biosystemsbio.com **Phone:** +44(0)1228522255	
2	Oil Gone Easy	**International Environmental Products, LLC** **Address:** Two Villanova Center, 795 E Lancaster Ave. Suite 280, Villanova, PA 19085 **Email:** info@iepusa.com **Phone:** (610) 520 – 7665	
3	Alpine EHC 1870		
4	Oil Spill Eater 11 Concentrate	**OSEI Corporation (Formerly Sky Blue Chems)** **Address:** P.O. Box 515429, Dallas, TX 75251-5429 **Website:** www.osei.us **Phone:** (972) 669 – 3390	
5	Schaco Oil Fix		
6	Bioworld Bioremediation Bioworld microbes	**BioWorld Products (International Headquarters)** **Address:** P.O. Box 2920, 8244 W. Hillsdale Court, Visalia, CA 93279 **Website:** www.bloworldusa.com **Phone:** (559) 651-2042	
7	OBD Plus Bioremediation	**Kengro Corporation** **Address:** 6605 Hwy 32 E P.O. Box 432, Charleston, Missippi, United States **Phone:** 011-662-6472456	
8	Peatsorb	**Oil Spill Control** **Address:** 7 Grasmere, Pinelands, 7405, Cape Town, South Africa **Website:** http://oilspillcontrol.co.za **Phone:** 0215315335	
9	Petroguard-D		
10	Remediade Hydrocarbon	**JDMV Holdings, LP** **Address:** 15995 N. Barkers Landing Suite 143, Houston, TX 77079 **Website:** www.jdmvholdingslp.com **Phone:** (281) 558-3433	
11	IHP-500	**LAF Technologies Pty Ltd.** **Address:** Factory 28, 513-515 Maroondah Hwy, Ringwood, Victoria, Australia. 3134 **Website:** http://biodecontamination.com.au/bio-decomination-home **Phone:** +61 03 9879 1777	

12	Frelo Hydrocarbon converter	**Frelo Hydrocarbon LLC** **Address:** 2119 W. Ave. B Hope, AR 71801 **Phone:** 800 -764-8806/870 -777 – 7637 **Email:** info@frelo.com **Website:** http://frelo.com	
13	Sanol foam	**Sanol AB** **Address:** Brodalsvagen 5 433 38 Partille, Sweden **Email:** info@sanol.com **Phone:** +46 31-336 55 11	
14	Exsorbet	**Exsorbet Industries Inc. (Consolidated Eco-Systems Inc.)** **Address:** One Exsorbent Lane, Mulberry AR 72947	
15	Recoil		
16	Remediact 1902	**SpillAway International** **Address:** Unit 3 – Wakes End Farm Estate, Eversholt, Bedfordshire, MK17 9FB, United Kingdom **Website:** http://www.spillaway.co.uk **Phone:** +44 (0) 1525 288200	
17	VB591/997	**BioNutraTech Inc.** **Address:** P.O. Box 290, Porter, TX 77365 **Website:** http://www.bionutratech.com **Phone:** (281) 354-5900	
18	Biocleaning Fog Dilex		
19	Decongel 1102	**Website:** http://decongel.com **Phone:** (808) 949 – 2215 ext. 146	
20	Ergofit micro mix bioremediation Agent	**ERGOFIT USA LLC** **Address:** 40 E. Main Street #379 Newark, DE 19711 **Website:** www.micromix-usa.com **Phone:** (302)235 – 3085	
21	NOCHAR	**NoChar Inc.** **Address:** 8650 Commerce Park Place, Suite K, Indianapolis, IN 46268 **Email:** nochar@nochar.com **Phone:** 317.613.3046	
22	Slickgone	**Dasic International Limited** **Address:** Winchester Hill, Romsey, Hampshire, SO51 7YD, United Kingdom **Email:** info@dasicinter.com/sales@dasicinter.com **Phone:** +44 (0) 1794 512 419	
23	Ecolan M	**Ecolab Inc.** **Address:** Corporate Headquarters, 370 N, Wabasha Street, St. Paul, Minnesota 55102-2233 **Phone:** 651 293 2233	

ANNEX 4

CRUDE OIL AND PETROLEUM PRODUCTS PIPELINE

MAP OF NIGERIA



ANNEX 5

NATIONWIDE CRUDE OIL AND PETROLEUM PRODUCTS

TANKAGE PROFILES

Warri Refining and Petrochemical Company Tankage Profile

S/No	Tank No	Service/Product	Capacity m^3
1	1	Crude	23,600
2	2	Crude	23,600
3	3	Crude	23,600
4	4	Crude	23,600
5	5	Crude	23,600
6	6	Crude	23,600
7	7	Heavy Slop	5,000
8	8	Light Slop	5,000
9	9	Naphtha	3,800
10	10	Treated Naphtha	6,200
11	11	Naphtha	10,400
12	12	Naphtha	10,400
13	13	Reformate	19,500
14	14	Reformate	19,500
15	15	FCC Gasoline	23,500
16	16	FCC Gasoline	23,500
17	17	Naphtha	16,000
18	18	PMS	10,200
19	19	PMS	10,200
20	20	PMS	13,000
21	21	PMS	13,000
22	22	Kerosene	9,000
23	23	Kerosene	18,000
24	24	Kerosene	18,000
25	25	Kerosene	16,000
26	26	Kerosene	16,000
27	27	FCC Feed	14,000
28	28	FCC Feed	17,000
29	29	Gas Oil	31,500
30	30	Gas Oil	31,500
31	31	Gas Oil	17,000

32	32	Gas Oil	17,000
33	33	Gas Oil	17,000
34	34	Fuel Oil	9,600
35	35	Fuel Oil	7,200
36	36	Fuel Oil	7,200
37	37	Fuel Oil	17,200
38	38	Fuel Oil	17,200
39	39	Fuel Oil	17,200
40	40	Leaded PMS	75
41	41	Naphtha	11,580
42	42	Naphtha	11,580
43	43	PMS	26,050
44	44	PMS	26,050
45	45	Fuel Oil	26,050
46	46	Fuel Oil	26,050
47	47	FCC Feed	33,000
48	48	FCC Feed	33,000
49	51	Propane	3,600
50	52	Propane	3,600
51	53	Butane	5,000
52	54	Butane	5,000
53	55	Butane	5,000
54	56	Butane	345
55	57	Butane	3,050
56	58	Butane	1,430
57	59	Butane	1,430
58	61	Crude	64,500
59	62	Crude	31,800
60	63	Crude	31,800
61	64	Crude	950
62	65	Crude	4,700
63	70	Alkylate	1,350
64	71	Alkylate	1,350
65	72	Alkylate	6,500
66	80	Crude	33,000
67	81	Crude	33,000
68	82	Crude	33,000
69	83	Crude	33,000

Pipelines and Products Marketing Company Plc
Nationwide Storage Tanks

I. GOMBE AREA

a) Gombe Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	5,252	FLR
12	PMS	5,247	FLR
21	PMS	2,312	FLR
22	PMS	23,140	FLR
31	DPK	2,306	FLR
32	DPK	2,306	FLR
41	AGO	3,555	FXR
42	AGO	3,544	FXR
51	AGO	172	FXR
52	Slop	172	FXR
53	Slop	171	FXR
54	Slop	171	FXR
61	Water	5,000	FXR
98	Diesel	13.50	FXR
99	Diesel		FXR

b) Jos Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
1	PMS	6,712	FLR
2	PMS	15,497	FLR
5	PMS	2,714	FLR
6	PMS	1,628	FLR
17	PMS	23,107	FLR
18	PMS	23,227	FLR
3	DPK	6,711	FLR
4	DPK	2,701	FLR
7	AGO	14,074	FXR
8	AGO	5,500	FXR
19	AGO	23,328	FXR
9	SLOP	338	FXR
10	SLOP	338	FXR
11	SLOP	337	FXR
12	SLOP	337	FXR

c) Maiduguri Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
101	AGO	8,160	FXR
102	AGO	9,530	FXR
201	DPK	9,800	FLR
202	DPK	5,587	FLR
203	PMS	5,587	FLR
204	PMS	5,587	FLR
205	PMS	9,775	FLR
206	PMS	9,775	FLR

d) Yola Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
101	PMS	13,000	FLR
102	PMS	13,000	FLR
103	PMS	13,000	FLR
201	DPK	7,300	FXR
202	DPK	7,300	FXR
203	DPK	7,300	FXR
301	AGO	8,000	FXR
302	AGO	8,000	FXR
303	AGO	8,000	FXR
401	SLOP	175	FXR
402	SLOP	175	FXR
403	SLOP	175	FXR
404	SLOP	175	FXR
	Water		FXR

II.KADUNA AREA

a) Gusau Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
1	PMS	24,691	FLR
2	PMS	24,779	FLR
3	DPK	11,557	FLR
4	DPK	11,556	FLR
5	PMS	6,055	FLR
6	PMS	6,005	FLR
7	AGO	31,851	FXR
8	AGO	31,851	FXR

b) Gusau Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	9,758	FLR
12	PMS	9,758	FLR
21	PMS	2,190	FXR
22	PMS	2,190	FXR
31	DPK	2,190	FXR
32	DPK	2,190	FXR
33	DPK	2,190	FXR
34	DPK	2,701	FXR
41	AGO	9,544	FXR
42	AGO	9,544	FXR
51	SLOP	178	FXR
52	SLOP	178	FXR
53	SLOP	178	FXR
54	SLOP	178	FXR
61	Water	6,000	FXR
98	Diesel	10	FXR
99	Diesel	17,000	FXR

c) Minna Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
101	PMS	8,952	FLR
102	PMS	8,940	FLR
103	PMS	8,931	FLR
201	DPK	5,124	FXR
202	DPK	5,124	FXR
203	DPK	5,029	FXR
301	AGO	8,093	FXR
302	AGO	8,041	FXR
303	AGO	8,371	FXR
401	SLOP	198	FXR
402	SLOP	198	FXR
403	SLOP	198	FXR
404	SLOP	199	FXR
	Water		FXR

d) Suleja Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
101	PMS	12,000	FLR
102	PMS	12,000	FLR
103	PMS	12,000	FLR
104	PMS	12,000	FLR
201	DPK	8,300	FXR
202	DPK	8,300	FXR
203	DPK	8,300	FXR
204	DPK	8,300	FXR
301	AGO	8,000	FXR
302	AGO	8,000	FXR
303	AGO	8,000	FXR
401	SLOP	213	FXR
402	SLOP	213	FXR
403	SLOP	213	FXR
404	SLOP	213	FXR
	Water		FXR

III.MOSIMI AREA

a) Atlas Cove Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	19,315	FLR
12	PMS	25,297	FLR
21	PMS	9,230	FLR
31	DPK	17,010	FLR
32	PMS	16,450	FLR
41	AGO	16,300	FXR
42	AGO	16,300	FXR
51	Bunker	1,270	FXR
61	Bunker	3,459	FXR
81	SLOPE	5	FXR
82	SLOPE	5	FXR
95	Water	67	FXR

b) Ibadan Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	20,700	FLR
12	PMS	20,670	FLR
13	PMS	20,730	FLR
14	PMS	20,730	FLR
21	PMS	9,950	FLR
22	PMS	9,950	FLR
31	DPK	7,185	FLR
32	DPK	7,185	FLR
33	DPK	7,185	FXR
34	DPK	9,100	FXR
41	AGO	9,100	FXR
42	AGO	9,100	FXR
43	AGO	9,100	FXR
44	AGO	9,100	FXR
51	SLOP	375	FXR
52	SLOP	375	FXR
53	SLOP	375	FXR
54	SLOP	375	FXR
61	Water	6,372	FXR

c) Ilorin Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	9,925	FLR
12	PMS	9,975	FLR
21	PMS	9,919	FLR
22	PMS	2,331	FXR
31	DPK	2,332	FXR
32	DPK	2,332	FXR
33	DPK	2,333	FXR
41	AGO	10,019	FXR
42	AGO	9,983	FXR
51	SLOP	189	FXR
52	SLOP	197	FXR
53	SLOP	198	FXR
54	SLOP	197	FXR
61	Fire	200	FXR
98	Diesel	1,000	FXR
99	Diesel		FXR

d) Mosimi Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	23,715	FLR
12	PMS	23,725	FLR
13	PMS	23,725	FLR
14	PMS	23,710	FLR
15	PMS	23,710	FLR
16	PMS	23,835	FLR
21	PMS	4,678	FXR
22	PMS	16,555	FLR
41	ATK	2,834	FLR
42	ATK	2,858	FLR
43	ATK	2,904	FLR
44	DPK	19,220	FLR

45	DPK	19,230	FLR
46	DPK	19,220	FLR
47	DPK	19,135	FLR
51	AGO	23,090	FXR
52	AGO	23,080	FXR
53	AGO	23,065	FXR
54	AGO	23,074	FXR
55	AGO	23,108	FXR
56	AGO	9,786	FXR
61	Water	6,080	FXR
71	SLOP	542	FXR
72	SLOP	542	FXR
73	SLOP	542	FXR
74	SLOP	542	FXR
98	Diesel	202	FXR
99	Diesel	1,515	

e) Ore Depot Tankage Profile

Tank No.	**Product**	**Total Capacity (m^3)**	**Roof Type**
11	PMS	11,190	FLR
12	PMS	11,210	FLR
21	PMS	1,645	FLR
22	PMS	1,650	FLR
31	DPK	3,010	FLR
32	DPK	3,010	FLR
41	AGO	5,275	FXR
42	AGO	5,280	FXR
51	SLOP	341	FXR
52	SLOP	342	FXR
53	SLOP	341	FXR
54	SLOP	341	FXR
61	Water	5,089	FXR
98	Diesel	1,515	FXR
99	Diesel	101	FXR

f) Satellite Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	5,126	FLR
12	PMS	5,127	FLR
21	PMS	878	FLR
22	PMS	878	FLR
31	DPK	999	FLR
32	DPK	999	FLR
41	AGO	5,942	FXR
42	AGO	5,939	FXR
51	SLOP	65	FXR
52	SLOP	65	FXR
61	Water	5,089	FXR
98	Diesel	10.1	FXR
99	Diesel	1.516	FXR

IV.WARRI AREA

a) Benin Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
11	PMS	13,307	FLR
12	PMS	11,654	FLR
13	PMS	14,941	FLR
14	PMS	13,822	FLR
21	PMS	2,806	FLR
22	PMS	2,806	FLR
31	DPK	3,073	FLR
32	DPK	3,073	FLR
33	DPK	12,283	FXR
34	DPK	10,016	FXR
41	AGO	12,200	FXR
42	AGO	12,200	FXR
43	AGO	8,328	FXR
51	SLOP	344	FXR
52	SLOP	344	FXR
53	SLOP	344	FXR
54	SLOP	344	FXR
61	Water	5,089	FXR
98	Diesel	10.1	FXR
99	Diesel	1.6	FXR

b) Escravos Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
101	Escravos Light Crude	62,446	
102	Arabian Light Crude	624,493	
103	Arabian Light Crude	62,815	
104	Escravos Light Crude	62,990	
105	SLOP	1,950	
106	AGO Utility	2,015	
107	Escravos Light Crude	61,165	
111	AGO Utility	6,405.6	

V. PORT HARCOURT AREA

a) Aba Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
101	PMS	1,039	FLR
102	PMS	1,039	FLR
103	DPK	3,814	FLR
104	DPK	3,809	FLR
105	DPK	2,060	FXR
201	AGO	7,738	FXR
202	AGO	7,753	FXR
203	AGO	14,500	FXR
204	AGO	15,433	FXR
301	PMS	9,792	FLR
302	PMS	9,629	FLR
307	PMS	20,539	FLR
308	PMS	20,596	FLR

b) Calabar Depot Tankage Storage

Tank No.	Product	Total Capacity (m^3)	Roof Type
1	PMS	10,600	FLR
11	PMS	10,700	FLR
21	DPK	10,100	FLR
31	AGO	10,300	FXR
41	AGO	10,200	FXR
51	SLOP	30	HCR
52	SLOP	30	HCR
61	Water	9,800	FXR
98	Diesel		HCR
99	Diesel		VCR

c) Port Harcourt Refinery Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
55A	PMS	1,593	FLR
55B	PMS	1, 593	FLR
56A	PMS	3,097	FLR
56B	PMS	3,097	FLR
58A	DPK	1,594	FLR
58B	DPK	1,594	FLR
60A	AGO	1,970	FXR
60B	AGO	1,970	FXR

d) Enugu Depot Tankage Profile

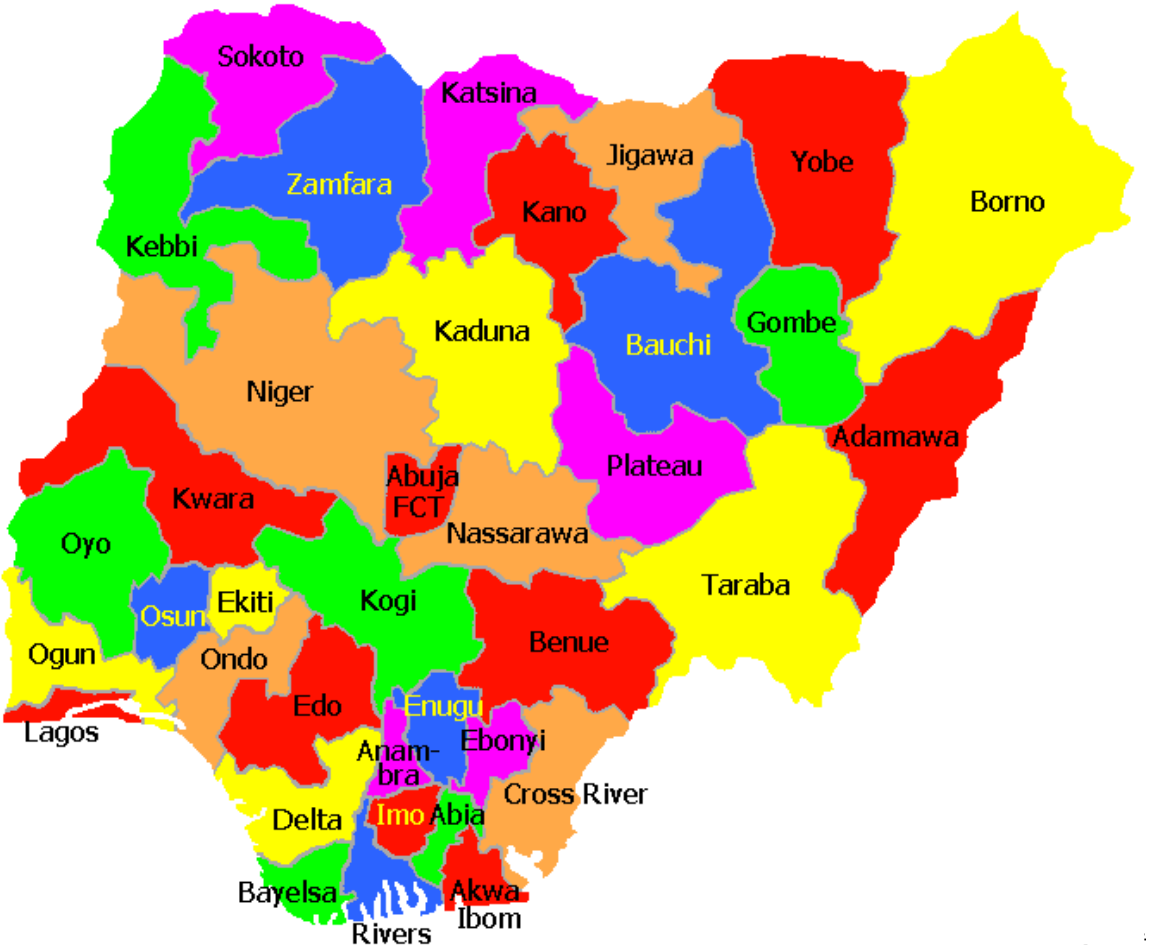
Tank No.	Product	Total Capacity (m^3)	Roof Type
101	PMS	1,445	FLR
102	PMS	2,550	FLR
103	PMS	2,540	FLR
104	DPK	5,000	FLR
105	DPK	5,000	FLR
106	DPK	5,000	FLR
107	DPK	5,000	FLR
108	DPK	10,831	FXR
109	DPK	10,847	FXR
110	DPK	10,853	FXR
201	PMS	23,450	FXR
202	PMS	23,565	FXR
208	PMS	17,000	FLR
209	PMS	15,000	FLR
210	PMS	15,000	FLR
304	AGO	12,826	FXR
305	AGO	12,828	FXR
306	AGO	12,825	FXR

e) Makurdi Depot Tankage Profile

Tank No.	Product	Total Capacity (m^3)	Roof Type
101	DPK	7,619	FLR
102	DPK	2,241	FLR
103	DPK	2,241	FLR
104	DPK	8,073	FXR
105	DPK	8,073	FXR
201	DPK	9,442	FXR
202	DPK	9,200	FXR
203	DPK	9,200	FXR
208	DPK	5,195	FXR
301	PMS	10,103	FLR
302	PMS	10,103	FLR
303	PMS	7,230	FLR
304	PMS	7,230	FLR
305	PMS	1,355	FLR
306	PMS	1,355	FLR
307	PMS	14,555	FLR
308	PMS	8,415	FLR

ANNEX 6

GEOGRAPHICAL AREA COVERED BY THIS PLAN*



*Individual Oil Companies are required to insert their operational area maps

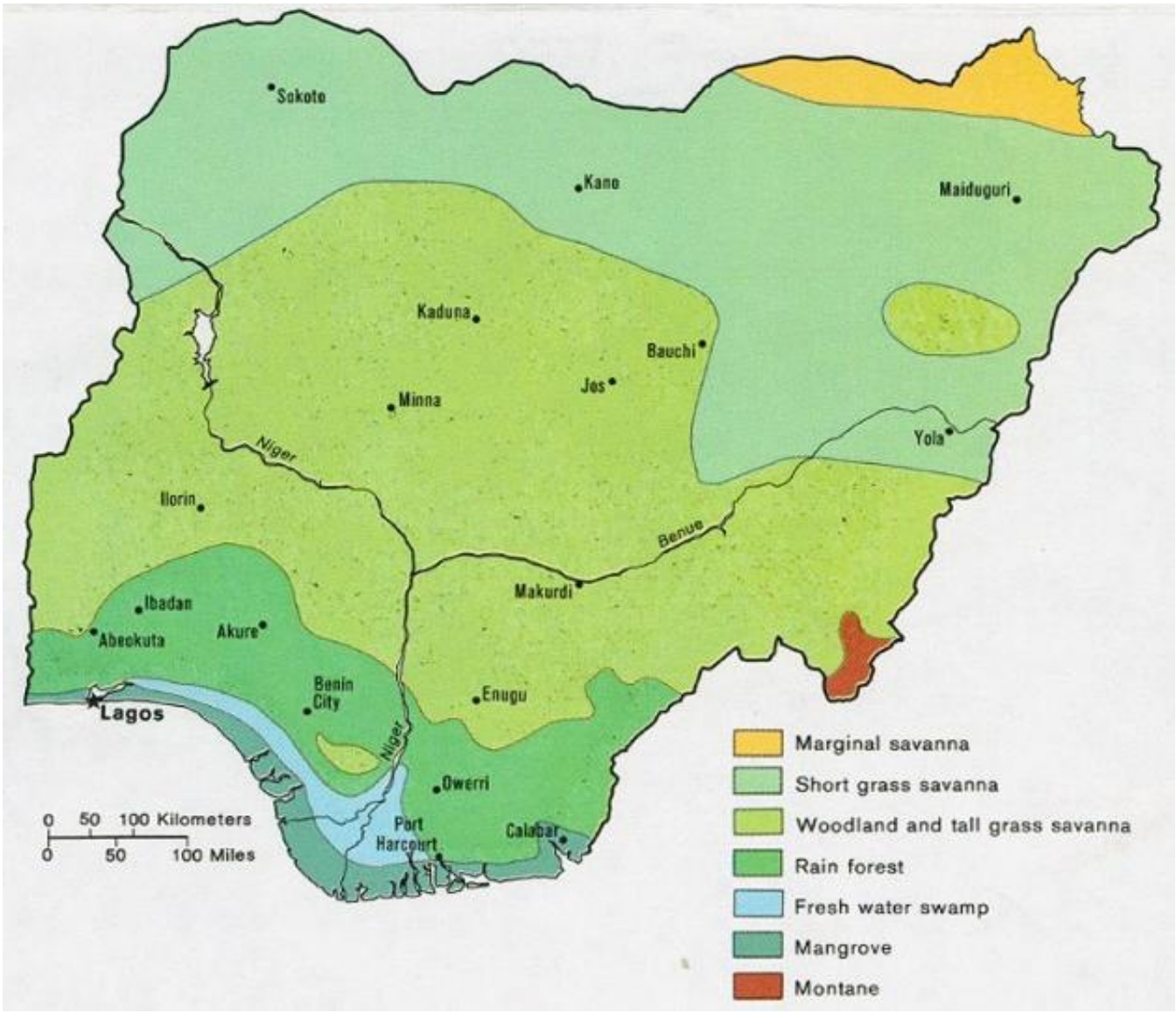
ANNEX 7

TIDAL TABLES

(Current tidal tables available on request from the Nigerian Navy)

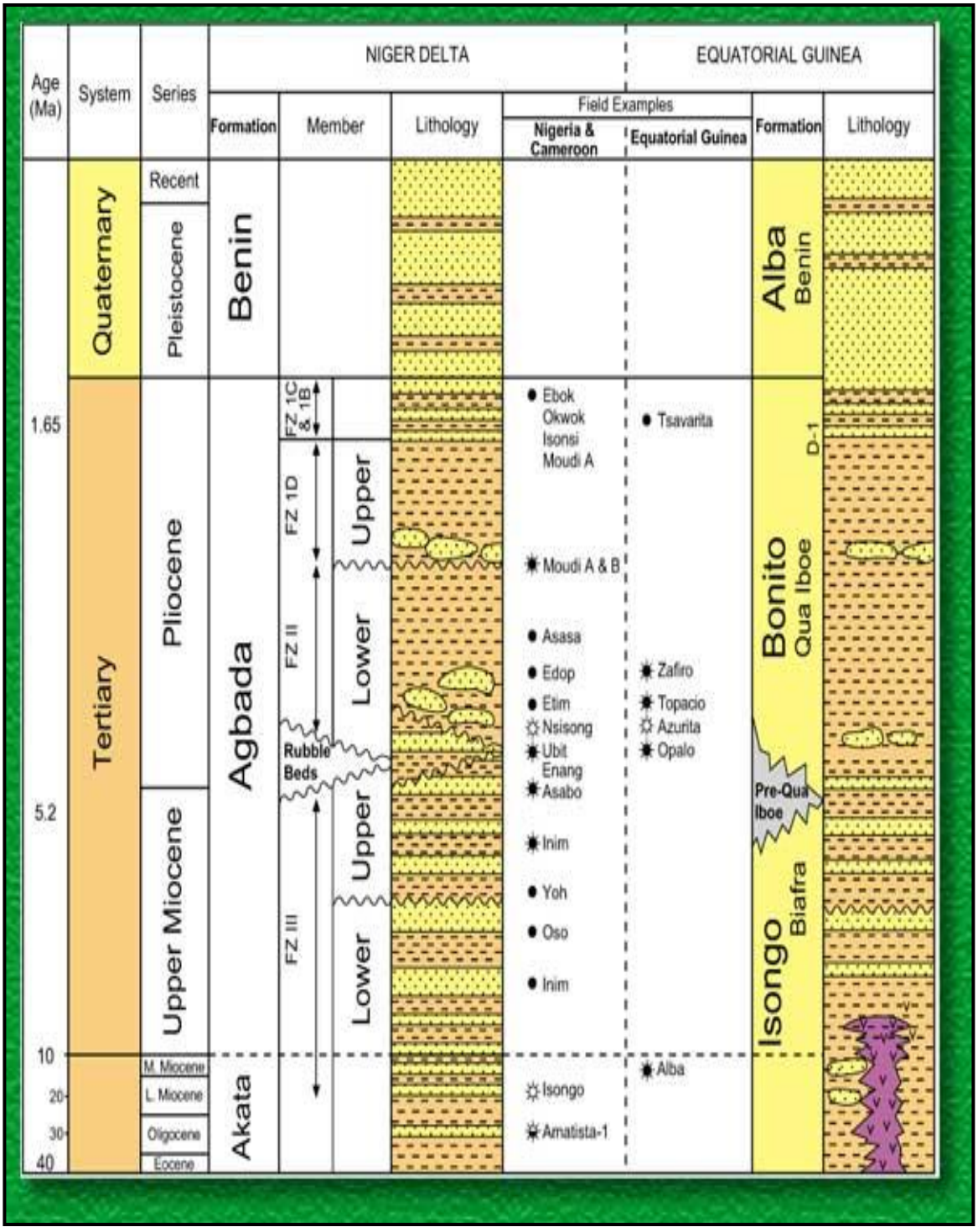
ANNEX 8

VEGETATION MAP OF NIGERIA



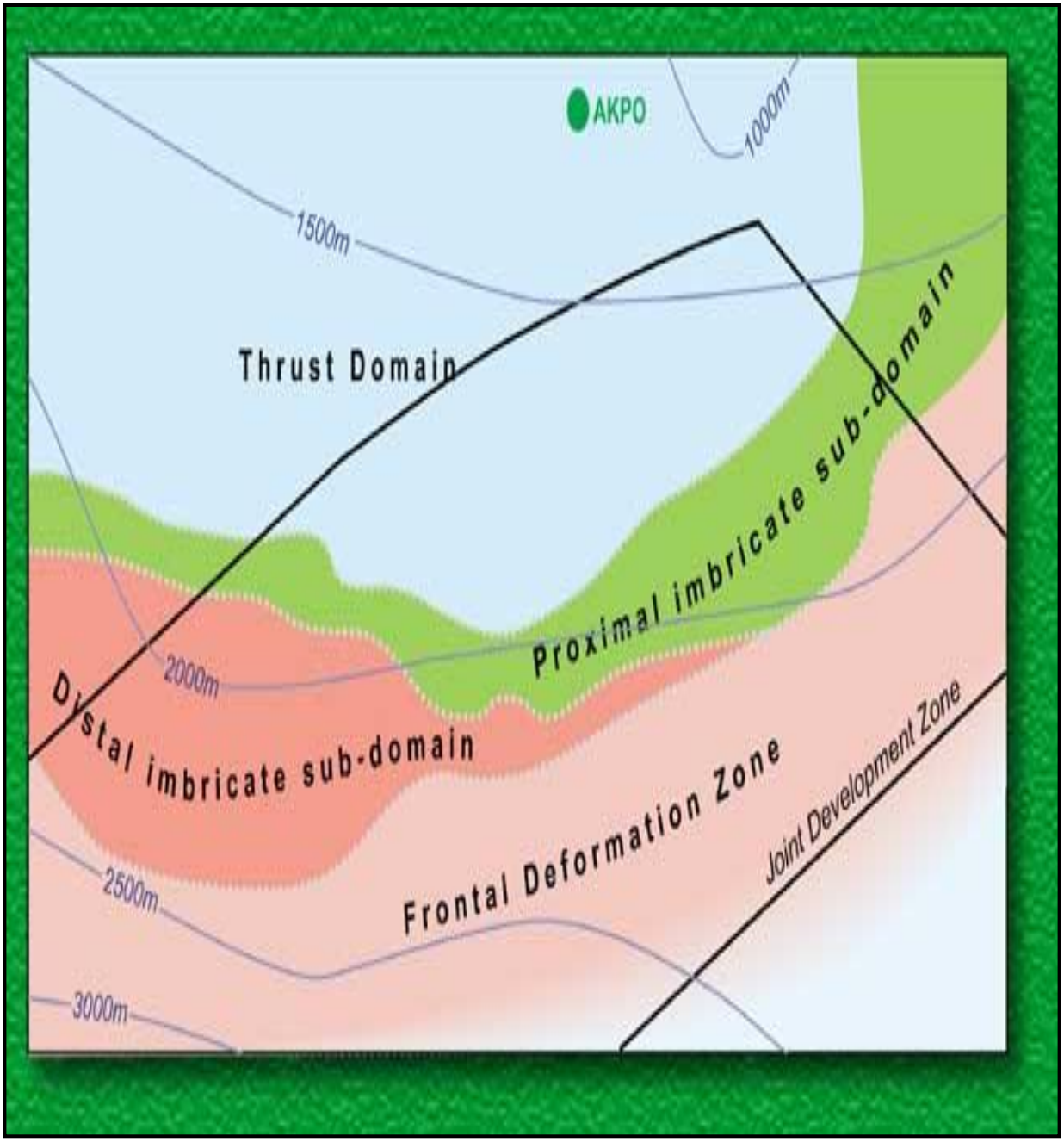
ANNEX 9

THE STRATIGRAPHY OF THE NIGER DELTA



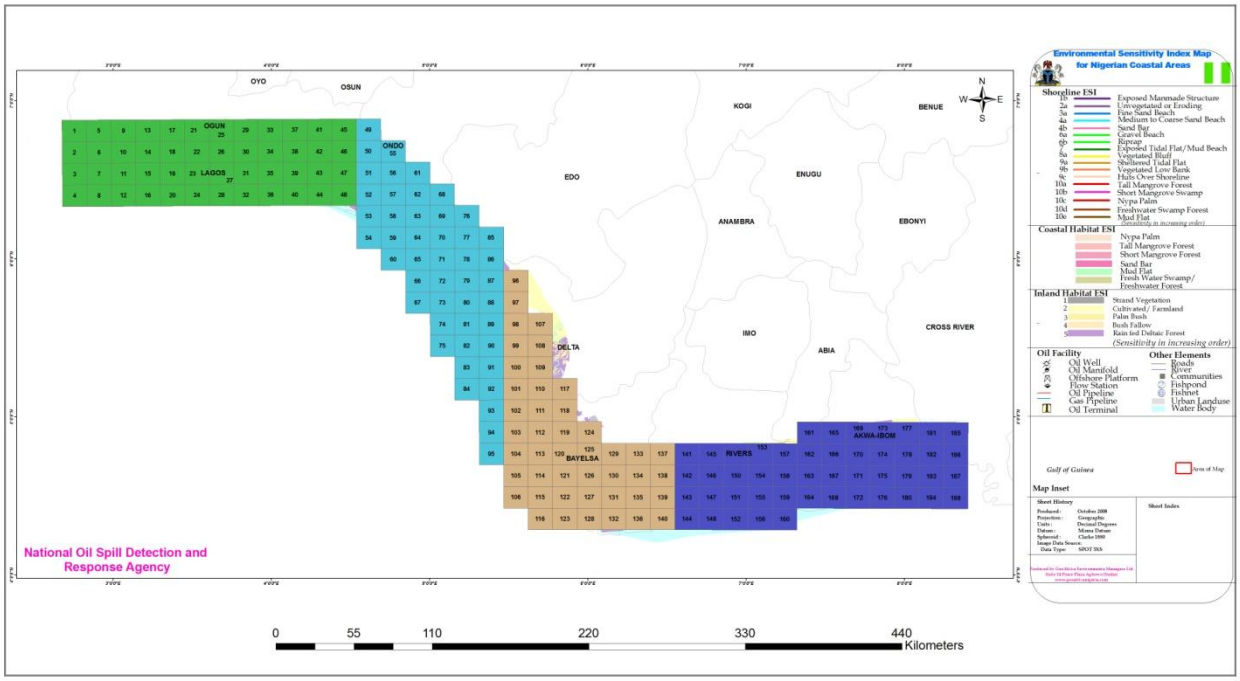
ANNEX 10

STRUCTURAL ELEMENTS IN THE NIGER DELTA GEOLOGY



ANNEX 11

ENVIRONMENTAL SENSITIVITY INDEX (ESI) MAPS



Environmental Sensitivity Index Maps of the Nigerian Coastline (from Badagry to Calabar 50km inland) are available from the National Oil Spill Detection & Response Agency (NOSDRA).

For further information, please contact:

Mr. O. J. Abe – Director (Planning, Policy Analysis & Research)

08023307481, 08166647945

OR

Mr. D. A. Gidado – Deputy Director (Planning, Policy Analysis & Research) II

08036138408, 07042077779

ANNEX 12

PRESS/ MEDIA CONTACTS

S/N	MEDIA HOUSE	ADDRESS/EMAIL	MOBILE NO.
1	NOSDRA Public Affairs Unit	**Mr. Henshaw Ogubuike** Chief Information Officer (CIO)	08037037919
2	THE GUARDIAN	letters@ngguardiannews.com	01- 4489600, 2798269 07098147948 07098147951
3	THISDAY	editor@thisdayonline.com	Lagos: 08022924721 Abuja: 08076290487
4	DAILY TRUST	dailytrust@yahoo.com	09-6726241 09-6715364
5	INDEPENDENT	info@independent.ngonline.com	017733499 08023234074 08023659873
6	DAILY CHAMPION		014525840 014800872
7	VANGUARD	editor@vanguardngr.com	Abuja: 09-2341102 09-2342704
8	FINANCIAL STANDARD		094139620
9	Africa independent television (AIT)	**Efenji Efenji**	07034372621
10	LEADERSHIP	info@ining.com leadershipnigeria@yahoo.com	09-2345053
11	DAILY SUN	letters@sunnewsonline.com	01-8980932, 6211239 09- 8700273-6
12	THE NATION	info@thenationaonlineng.net	01-8155547
13	THE PUNCH		

ANNEX 13

OIL SPILL EMERGENCY RESPONSE CONTACT PERSONS

The following individuals will be contacted by the National Command and Control Response Centre or the relevant Zonal Command and Control Response Centre as the case might be, after confirmation of an oil spill incident and as directed by the National Commander.

MINISTRIES, DEPARTMENTS AND AGENCIES

S/N	ORGANISATION	NAME	OFFICE ADDRESS	E-MAIL ADDRESS	PHONE NUMBER
1	Federal Ministry of Environment	Mrs Hadiza Ibrahim Mailafia	Federal Ministry of Environment Mabushi, Abuja.		
2	National Oil Spill Detection and Response Agency (NOSDRA) Abuja HQ	Sir Peter Idabor	5th Floor NAIC House, Central Business District - Abuja	peteridab@yahoo.com	092911971 09 2911972
3	NOSDRA Abuja HQ	Mr. I. O. Musa- Director, OFA	5th Floor NAIC House, Central Business District - Abuja	iomusa2003@yahoo.com	08033153547
4	NOSDRA Abuja HQ	Mr. O.J. Abe-Director, PPAR	5th Floor NAIC House, Central Business District - Abuja	phemyabey@yahoo.com	08023307481
5	Ministry of Defence	Mohammed Talba Shua	PR & S Department Area 10 Garki - Abuja F.C.T	talbababaji@yahoo.com	08032941717
6	Nigerian National Petroleum Corporation (NNPC)	Rabiu I. Suleiman (GM-Group HSE)	Block B NNPC Tower Herbert Macaulay Way, Central Business District P.M.B 190, Garki - Abuja	rabiu.suleiman@nnpcgroup.com	09-46082810 08035350260
		R.N Ndiokho (Manager Pollution)	Block B NNPC Tower Herbert Macaulay Way, Central Business District P.M.B 190, Garki - Abuja	robinson.ndiokho@nnpcgroup.com	09-46082828 07064107081
7	Federal Ministry of Interior	Mr.Letit, J.T	Paramilitary Department, Old Secretariat , Garki Area 1 Abuja FCT	letitjoe@yahoo.com	08036175133
8	Federal Ministry of Transport.	Umar Sani	Bukar Dipcharima House, Central Area –Abuja FCT		08036547702
		Aisha Bisalla	Bukar Dipcharima House, Central Area –Abuja FCT	aishabisalla@yahoo.com	08054345933
9	Nigerian Ports Authority PLC.	Mr. E.A. Edozie Assistant General Manager, Environment	Room 218, Nigerian Ports Authority HQ 26/28, Marina, Lagos.	eaedozie@yahoo.com	08023121636

10	Federal Fire Service	Azogu Quintus Gerald	Mohammed Buhari Way , P.M.B 1243, Garki, Abuja		0804008758
11	Clean Nigeria Associates	Chief Chibuzor Nnubia, General Manager	Fire Building Rooms 1 & 2 SPDC Kidney Island, Port Harcourt, Rivers State	chibuzor.nnubia@shell.com, chinnubia@yahoo.com	08033404705 08023360585 084-427883
12	The Nigerian Army,	Brig General Alli	The Army Headquarters, Area 8, Abuja		08083681591
		Brigadier General U. Chima – Commander, Land Component	Joint Task Force, Operation RESTORE HOPE		08035566829
13	Nigerian Air Force	Group Captain C. E. Egwoba		kristaldric@yahoo.com	08050803670
14	Nigerian Customs Service (NCS)	L. I. Okoloagu	NCS Headquarters Wuse, Zone 3, Abuja	okoloagul@yahoo.com	08033253524
		B.C. Nsofor	NCS Headquarters Wuse, Zone 3, Abuja	bertramnsofor@yahoo.com	08067404925
15	Nigerian Immigration Service	Dr. Dominic Abaver (CSI)	Nigerian Immigration Service Headquarters, Sauka- Abuja	abdomnic@yahoo.ca	08037024604, 08089737119
16	Nigerian Maritime Administration & Safety Agency (NIMASA)	M. B. Adewale	Maritime House, 4, Burma Road, Apapa, Lagos.		08098249956
		Catherine Nwuba	Maritime House, 4, Burma Road, Apapa, Lagos.	katenwuba@yahoo.com	08033748192
17	The Nigerian Navy	Capt. B. B. Kole	The Naval Headquarters, Area 10, Abuja	kolebadom@yahoo.com	08036677584
18	The Nigerian Security & Civil Defence Corps	Ojo Wasiu	NSCDC Headquarters, Wuse Zone 5, Abuja		08053352285
19	National Emergency Management Agency (NEMA)	Funmilayo Obolo		funmob@yahoo.com	08138222124
20	Federal Ministry of Information	K. N. Offie		keneoffie@yahoo.com	08033174547
21	Department of State Services (DSS)	Moh'd Abdullahi		yarukochi@yahoo.com	08036829114
		Bulus A. Licious			08034416802

22	Nigerian Meteorological Agency (NIMET)	Glory Onyegbule	NIMET Office, Nnamdi Azikwe International Airport, Abuja FCT	glo_amara@yahoo.com	08023394907
		Juliana Ukeje		julie_ukeja@yahoo.co.uk	08037879565
23	Federal Ministry of Agriculture	Garuba Ganni		ganigarbaj@yahoo.com	08055920737
		E. U. Effiong		effiong_eu@yahoo.com	09069709884

NOSDRA ZONAL COMMAND

S/N	ZONE	NAME	OFFICE ADDRESS	E-MAIL ADDRESS	PHONE NUMBER
1	Warri Zonal Office.	Mr. B. O. Akindele. Zonal Commander	4613 Esisi Road, GRA, P.M.B. 115014, Warri-Delta State.	bunmiakindele2000@yahoo.com	08035650495
2	Lagos, Zonal Office	Mrs. C. O. Okunubi Zonal Commander (LAGOS)	Federal Ministry of Environment Complex, King George IV Street, Games Village, off Bode Thomas Street, Surulere-Lagos State	cokunubi@yahoo.com	08023136998 08053032019
3	Port Harcourt Zonal Office	Mr.M.O. Adeyinka Zonal Commander (PORT HARCOURT)	No 32, Bodo Street, GRA Phase II Port Harcourt- Rivers State	wunmimadeyinka@yahoo.com	08033528753 08124991194
4	Uyo Zonal Office	Mr. Irvine Obot. Zonal Commander (UYO)	22, Williams street P.O box 339, Uyo-Akwa Ibom State.	irvine_obot@yahoo.com	08034417546
5	Kaduna Zonal Office	Mr. Isa Yinusa Chedi. Zonal Commander (KADUNA)	3rd Floor Olusegun Obasanjo House, State Secretariat Annex, yakubu Gowon way, Kaduna state	isachedi2010@yahoo.com	08028280120
6	Akure Zonal Office	Mr. Ime Ekanem Zonal Commander (AKURE)	Dumon House, No 122, Hospital Road, Akure, Ondo State.	ekanemimea1@yahoo.com	08064370070

OIL &GAS INDUSTRY OPERATORS

S/N	ORGANISATION	NAME	OFFICE ADDRESS	E-MAIL ADDRESS	PHONE NUMBER
1	Addax Petroleum Development Nigeria Limited	Albertine Diobo	Ozumba Mbadiwe Avenue Victoria Island – Lagos		08023147570
2	Exxon Mobil	Carol A. Antaih		carol.antaih@exxonmobil.com	08172067786
		Gregg Bartolo		gregg.b.bartolo@exxonmobil.com	08172067649
3	Conoil	Emmanuel Akpan		sarem090@yahoo.com.au	08166611784
4	Nigerian Petroleum Development Company (NPDC)	D. I. Idoko	62/64 Sapele Road, PMB 1262 – Benin City, Edo State		08028376517
		S. Ochonogor	62/64 Sapele Road, PMB 1262 – Benin City, Edo State		08186779828

INTERNATIONAL ORGANIZATIONS

S/N	ORGANISATION	NAME	OFFICE ADDRESS	E-MAIL ADDRESS	PHONE NUMBER
1	Oil Spill Response Limited (OSRL)	Director, Oil Spill Response Ltd (OSRL)	One Great Cumberland Place, London, W1H 7AL, United Kingdom	london@oilspillresponse.com	+44 (0)20 7724 0102
2	International Maritime Organization (IMO)	Secretary General	4, Albert Embarkment London, SEI 7SR	info@imo.org	+44 207 735 761 1
3	United Nations Environment Programme (UNEP)	Executive Secretary	United Nations Avenue, Gigiri, P. O. Box 30552, 00100, Nairobi, Kenya	unepinfo@unep.org	254-207621234, 254-207624489/90

ANNEX 14

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4. *Chevron Nigeria Limited, 1992, Oil Spill Contingency, Lagos, Nigeria.*

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