CLEAN NIGERIA ASSOCIATES LIMITED: DEVELOPMENT, CHALLENGES AND FUTURE OF AN AFRICAN OIL SPILL CO-OPERATIVE

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ABSTRACT

Clean Nigeria Associates Limited (CNA) was established in 1981 by oil companies operating in Nigeria as a non-profit second tier oil spill response organization. The primary objective was to provide a pool resource of oil spill response equipment, fast and effective second tier oil spill response capabilities, and expertise to aid members of the association in combating oil spills as a back up to any such capability kept by individual members.

CNA Oil Spill Response equipment and materials are currently stocked in Nigeria in two main bases (Onne and Warri) and two satellite bases (Kaduna and Eket) in Nigeria. The main bases became effectively active in 1985 when most of the equipments were purchased for CNA by Halliburton Nigeria Limited who was then the procurement and operating contractor.

The CNA stockpiles seven general types of oil spill response equipment/materials as follows:

1. *Fast Response Vessels and Flat Bottom Boats*
2. *Offshore and Inland Containment Booms*
3. *Skimmers and Pumps*
4. *Dispersant Spraying System*
5. *Sorbents*
6. *Vehicles*
7. *Communication Equipment*

Currently, CNA has three outsourced contracts – operations, warehousing and vehicle leasing. Also, upgrade activities are in progress to position CNA to play its role as enshrined in the newly established Nigerian National Oil Spill Contingency Plan.

This paper describes the history, development, challenges and future of CNA the first oil spill co-operative in Africa and its role in the rapidly changing Nigerian energy scene. It will also examine the method in which it functions as well as oil spills to which it has responded.

INTRODUCTION

The Clean Nigeria Associates, a co-operative of eleven oil producing companies in Nigeria was formed in November 1981 due to increasing awareness in the need to prevent and control oil spills in Nigeria and as a consequence of an oil spill seminar in 1979. The companies are, Agip Energy, Addax, Elf, Chevron, Dubri, Mobil, NAOC, NNPC, Pan Ocean, Shell and Texaco,

Previously, an informal mutual assistance plan between companies existed for many years. Under this arrangement, when spills occurred, local operators were expected to provide response equipment to the company involved. However, the oil industry decided to improve this loose arrangement by formalizing a co-operative agreement, creating Clean Nigeria Associates to provide state-of-the-art equipment, training and personnel to greatly increase the industry's capability of ensuring environmental protection.

The Clean Nigeria Associates (CNA) Heads of Agreement was signed in November 1981 and became fully operational in September 1985. This non-profit organisation enhances the oil spill containment and clean up capabilities of oil companies in Nigeria through the cooperative efforts of the members. CNA's primary purpose is to minimize the impact of oil spills on sensitive ecosystems and communities through the provision of relevant equipment and the use of a competent and dedicated response personnel. This oil spill co-operative provides a secondary spill response resource to each member's existing capability.

In view of the rapidly changing energy scene in Nigeria in which most oil operators are extending their exploration and production activities into offshore deep waters, CNAA ultimate upgrade goal is to acquire capabilities to meet the needs.

CNA OBJECTIVE

The objects for which the company is established are, in furtherance of the science of protecting, preserving and restoring the environment after oil spills:

- to establish and maintain a speedy and effective response capability to combat second-tier oil spills in addition to any such capability maintained by any individual member;
- to provide support in combating third-tier oil spills at the request of members, non-members or government agencies;
- to provide training programmes on, and conduct or support research into, subjects pertaining to the environment;
- to provide waste management services in relation to oil spill clean-up activities.

OPERATIONS

CNA Oil Spill Response equipment and materials are currently strategically stocked in two main bases and two satellite bases in Nigeria. The two main bases are located at the Onne Federal

Lighter Terminal of the Oil and Gas Export Free Zone in Port Harcourt and the old Port in Warri. The satellite bases are in Eket and the Kaduna Refinery. The main bases became operationally effective in 1985 when most of the equipment was purchased.

CNA RESPONSE STRATEGY

CNA Spill Response Philosophy

In order to satisfy the evolving spill response needs of its Members, CNA, as a Tier 2 Spill Response Organization, has a Readiness Responsibility to acquire, strategically store and maintain, appropriate equipment and materials and to professionally respond with such equipment using highly motivated, well trained and experienced personnel. While planning, management and training are obviously required to meet this responsibility, and since spill response is significantly an art rather than a science, experience must always be considered equally critical. Moreover, to maintain a professional, highly motivated staff, it is equally necessary that they be utilized appropriately, in "live situations", as much as possible. Finally, these needs must also be balanced with the need to provide for a reserve of manpower and equipment at the CNA bases so as to cover for the possibility of simultaneous multiple member call out requests.

To establish a proper balance of CNA asset utilization to provide for the requirements of experience, motivation and reserve readiness, the CNA spill response philosophy divides any spill response into two distinct operational phases:

PHASE 1: Critical Phase of Response

During this phase, the following activities are required:

1. To asses the spill
2. To disperse or contain the spill
3. To organize response activities at the spill site
4. To effect initial recovery of spilled product for disposal as directed.

PHASE 2: Clean Up Phase of Response

During this phase the following actions are required:

1. Complete recovery of the spilled product to the extent determined to be appropriate.
2. Complete clean up of polluted debris, etc.
3. Safe disposal of waste.
4. Conduct remediation measures as appropriate.

As a standard operating practice in any Member's Tier 2 Response, CNA will respond using CNA staff, materials and equipment and local labour, in accordance with the instructions of the on-scene commander. When CNA management has determined that Phase 1 operations have nearly been completed and that operational activities are approaching Phase 2, CNA management would then notify the on-scene commander in writing. Once the on–scene commander has confirmed the evaluations, because of CNA's reserve readiness requirements, CNA management would then recommend site operations be turned over to the member's Local Contractors for completion of Phase 2 operations. CNA staff can then demobilize from the site, except for providing possible periodic monitoring on behalf of the member. Of course, the on–scene commander would always have the option of leaving CNA in charge of site operations throughout any or all parts of Phase 2 operations. The choice will be his, subject only to agreement between himself and CNA management that appropriate concern for CNA's reserve readiness requirement has been taken into account.

Finally, to provide "added operational value" to members and CNA, members are strongly encouraged to use, whenever possible, CNA staff to assist in training, certifying their Local Contractors and to act as advisers/monitors even for their Tier 1 responses. If such assistance is properly requested, coordinated and organized, it can be provided at virtually **no cost** to members.

NIGERIAN TIERED RESPONSE PLAN FOR DEEP WATER OPERATIONS

Tier 1: Operators Response Capability

- Marine Dispersant Capability on all operational vessels
- Containment Capabilities (Booms) on some Vessels if considered appropriate

Tier 2: Co – operatives

- OSRL's organized Aerial Dispersant Response Capability – service provided by West and Central African Aerial Surveillance and Dispersant Services (WACAF) from Sao Tome.
- CNA
  - Personnel to assist as appropriate
  - Limited Offshore Response Capabilities
    - Fast Response Vessels (FRVs) with:
      - Marine Dispersant Spraying
      - Containment (Offshore Reel Pak Boom)
    - Recovery Capability with Fast Response Unit offshore skimmer using vessel of convenience
  - Personnel and Equipment on standby to be deployed for shore protection and or clean up activities

Tier 3: National and International Organizations

- Nigerian Tier 3 Response units, Aerial and Marine, as per National Pan Specifications
- OSRL's Aerial Dispersant Response Capability from Southampton U.K. (C 130 Aircraft)

CNA OUTSOURCED CONTRACTS

CNA currently operates with a core management team overseeing three outsourced contracts, namely:

- Operations Contract
- Transport Services
- Warehousing Services and Cargo Handling Services

CNA PERSONNEL STRENGTH

Total personnel strength of CNA is currently 77 made up of 5 CNA Core staff. 66 Operations Contractor staff and 6 drivers of leased vehicles

TRAINING

The personnel involved in combating oil spill must be given adequate training and all persons connected with oil operations should be made fully aware of the consequences of oil spillage. The Clean Nigeria Associates (CNA) offer pollution control training and expertise to its personnel as well as member company's staff. In the CNA bases, personnel undergo regular hands-on-equipment training. Minor and major drills attended by representatives of member oil companies form essential parts of training. Apart from regular local training, annual overseas training has been found to add the necessary international exposure for personnel of Clean Nigeria Associates.

The most recent major drill by CNA was hosted by Addax Petroleum Nigeria Limited between 21 – 23 November 2006. The exercise objective were

Tier I to test compliance with Department Petroleum Resources Regulations and effectiveness of ADDAX Response.

Tier II to test ability to call out West and Central African Dispersant Services for effective initial Regional aerial dispersant spraying. Also the exercise would test CNA capability to mobilize resources in response to major oil spill originating at Atan Terminal.

Tier III to test the effectiveness of large scale aerial dispersant application and dispersant re-supply

External auditors especially from OSRL reported that

- drill was well planned and executed
- safe operations – no incidents
- all major objectives of programme were met
- learning points were identified
- good opportunity for operators and regulators to see WACAF equipment resources up close, and,
- good opportunity for dialogue with regulators and building relationships

FIGURE 1A. DEPLOYMENTS OF OCEAN BOOM IN 'U' CONFIGURATION BY FAST RESPONSE VESSELS – ADDAX HOSTED CNA MAJOR DRILL, NOVEMBER 2006

FIGURE 1B. OSRL'S DISPERSANT SPRAYING AIRCRAFT AT CALABAR AIRPORT, NIGERIA - BRIEFING OF PARTICIPANTS DURING ADDAX HOSTED MAJOR DRILL

EQUIPMENT MAINTENANCE

This is an essential part of CNA operation whose policy stipulates among others, the requirement to professionally store and maintain, in a state of operational readiness, all the CNA equipment and materials in its stockpile in its four bases in Nigeria, Onne, Warri, Kaduna and Eket.

CNA has established a scheduled maintenance programme for all of its equipment. Trouble shooting and good record keeping for all tests and repairs carried out on equipment are maintained while strict adherence to the instructions in the operating manual of all equipment is insisted on. Adequate stocks of spare parts are maintained in the CNA bases to ensure continuous serviceability of the equipment.

OIL SPILLL EQUIPMENT STATUS

The most advanced oil spill containment and clean up equipment available in Nigeria belongs to CNA. Clean up equipment is also maintained by CNA member companies as a first line defence during an oil spill.

Although the CNA's major equipment stockpiles are primarily for use in the inland (swamps), coastal and limited offshore exploration and producing areas, the CNA makes Fast Response Equipment available for members and if need be non members spills anywhere within Nigeria and may be available to bordering countries

CNA stockpiles seven general types of oil spill response equipment/materials as follows:

- Fast Response Vessels and Flat Bottom Boats
- Offshore and Inland Containment Boom
- Skimmers and Pumps
- Dispersant Spraying System
- Sorbents
- Vehicles
- Communication Equipment

FAST RESPONSE VESSELS

The four Fast Response Vessels (FRV) are high speed aluminium hull boats 15 meters in overall length. These boats usually arrive on scene first with the advance response team. Each FRV carries personnel, dispersant and spray system, a boom mounted on the stem and is equipped with communication equipment. The changing threats of oil spill due to extension of operations into deeper waters which are beyond the operating range of the FRVs tend to support the plan by CNA to acquire offshore vessels. CNA's ability to integrate with OSRL's West and Central African Dispersant services group based in neighbouring Sao Tome will further address offshore spill threat.

FIGURE 2A. CNA FAST RESPONSE VESSELS

FIGURE 2B. CNA FAST RESPONSE VESSEL – ON SEA TRIAL

INLAND BOATS

These are Flat Bottom Boats used for deployment of smaller booms (inland containment boom) such as river booms and lake booms on inland waters of the Niger Delta. The smaller of CNA workboats usually called John Boats carry up to four persons and are powered by 25 HP Yamaha outboard engine. . However, for work purposes, it can carry two personnel and one section (150[1]) of river boom. CNA recently acquired bigger catamaran work boats that are powered by 27 HP Yanmar Diesel engines.

DISPERSANT SPRAYING SYSTEM

The dispersant spraying systems on CNA four Fast Response Vessels proportion and spray dispersants (Gold Crew) on the spill to disperse the oil. The dispersant tank capacity of each FRV is 4500 litres which is approximately 20 drums.

SORBENTS

Sorbents make up a large portion of the CNA Stockpile. Sorbent materials attract and retain oil and repel water making them very useful in cleaning oiled surfaces. The CNA sorbent stockpile includes sheets, pillows, booms and rolls. Sorbents are tools for final mop-up in any clean up operation.

VEHICLES

The CNA vehicles provide inland transport capability to almost any upland location in Nigeria. Specially designed flat bed trucks fitted with cranes as well as four wheel drive pick up vans; make lifting and transporting oil spill response equipment a self contained operation. Additionally these vehicles transport personnel to the site and tow purpose built generators and mobile command centres providing electricity light and communication equipment.

COMMUNICATION EQUIPMENT

The CNA stockpiles a range of communication equipment and these are located in the CNA operational four wheels vehicles, Fast Response Vessels and in the four CNA bases. Moreover key CNA dedicated personnel are equipped with mobile handy talkies. The communication equipment consists of Single Side Band (SSB) and Very High Frequency (VHF) radios. Wireless cell telephones play a crucial role in CNA operations. The role of communication in a spill response organization cannot be overemphasized. Efficient communication is live wire of any oil spill response operation.

CNA DEVELOPMENT

Restructuring Efforts- Management team

Based upon various recommendations for addressing identified shortcomings, CNA was incorporated in September 2000 as a body limited by guarantee, with a properly constituted Board of Directors, and Memorandum and Articles of Association. V.I. Services Limited was appointed to serve as Company Secretary.

The current CNA Board of Directors includes: NNPC (Chairman), NAOC/AENR (Vice Chairman), Mobil, SPDC, Chevron, Total (Elf), and Addax.

The Technical Committee, which is the advisory arm of the Board of Directors, comprise of: ConocoPhillips (Chairman), Total (Secretary), NNPC, Mobil, Chevron, NAOC, Addax and SPDC. The CNA General Manager reports to the Board of Directors.

CNA UPGRADE ACTIVITIES

Initial Five Year CNA Development and Upgrade Programme (2004 - 2008)

To meet the growing demand of CNA members' operational activities, the plan is to increase the number of CNA bases for adequate coverage of entire Oil and Gas operational areas including their offshore tier two needs.

For this purpose, CNA has embarked upon an initial 5-Year CNA Development Programme (2004 – 2008) in order to satisfy the tier-two Response Specifications contained in Nigerian National Oil Spill Contingency Plan (NOSCP).

This later requirement is aimed at providing an appropriate "Niger Delta Strike Team Response" and the tier two Offshore Response capability.

BASE EXPANSION UPGRADE

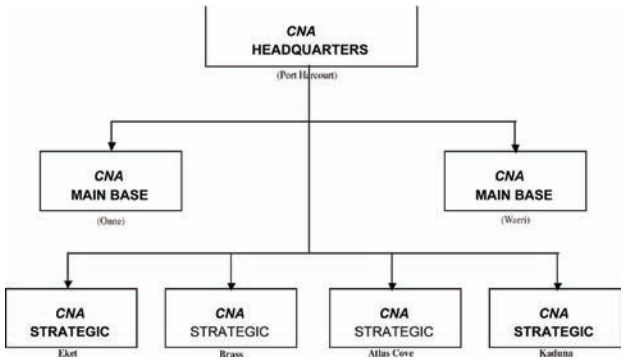
As part of the upgrade, plans are in progress to open new CNA bases at Atlas Cove in Lagos and Brass as stipulated in the NOSCP. The CNA Oil Spill Organisational Structure as specified in NOSCP is shown in table 1.

TABLE 1

CNA BASE LOCATIONS AS SPECIFIED IN THE NATIONAL PLAN

TIER 2 RESPONSE ORGANISATION – CLEAN NIGERIA ASSOCIATES LTD/GTE (CNA)

CNA SPILL RESPONSE ORGANISATIONAL STRUCTURE



Accordingly, the following base reorganization plan, which is specified in the Nigerian National Oil Spill Contingency Plan, provides for a more appropriate strategy of positioning existing and future CNA response assets.

BASE LOCATION	STATUS	MISSION RESPONSIBILITIES
Eket	Existing Strategic Base	Primary Response – Offshore/Terminal Secondary Response – Riverine/Delta/Land
Onne	Existing Main Base	Primary Response – Riverine/Delta/Land Secondary Response – Offshore
Brass	Proposed New Strategic Base	Primary Response – Riverine/Delta/Land Secondary Response – Offshore
Warri	Existing Main Base	Primary Response – Riverine/Delta/Land Secondary Response – Offshore
Atlas Cove	Proposed New Satellite Base	Terminal/Harbour Response
Kaduna	Existing Strategic Base	Refinery/Land Response

OIL SPILL EQUIPMENT UPGRADE

Phase 1 of the upgrade activities, which commenced in 2006, involves purchase of

- 24 Delta/Riverine Response Paks for containment and recovery
- 5000 ft Lake Boom with Accessories
- 4 Dispersant Storage and Loading Systems for Dispersant Spraying
- 6 Containerized Mini Vac Recovery Systems
- 10 Stackable Aluminum Work Boats for 27 HP Yanmar Engines

The items are to be stored in Modular Response Unit form for land and water transport so as to Improve Response Time, Provide Additional Security for the Equipment and Improve Inventory Control and Maintenance of the Equipment Stockpile. About two thirds of these equipment has been ordered and is being delivered. It is envisaged that the balance of equipment will be ordered soon and is expected to be delivered to the CNA Bases by Q3 2008.

Due to slow progress in executing activities of the 2004 – 2008 five year programme, which was largely due to funding and other technical issues, the five year plan is currently off schedule and is expected to extend beyond 2008.

CHALLENGES

CNA Operating Environment

The Area of Interest covered by CNA's operations is the entirety of the Federal Republic of Nigeria, the inland waterways therein, the territorial waters and continental shelf areas and the exclusive economic zone of Nigeria. Nigeria's total land and water area is 923,768 sq km, with the area of the land being 910,768 sq km while that of water is 13,000 sq km (CIA World Fact Book, 2005). Most of the Inland Water ways are in the Niger Delta region.

The Niger Delta is the area where the main river channel of the River Niger reaches base level and branches into multiple tributaries, disposing of and distributing the water discharge and sediment load. It covers all the land between latitude $4^{o}15^{1}$N and $4^{o}50^{1}$N and longitude $5^{o}25^{1}$E and $7^{o}37^{1}$E with a total area of 20,000km^2 (Powell et al. 1985). The region has some unique characteristics that tend to make development difficult. (Nwilo and Badejo, 2005)

Nigeria has a coastline of approximately 853km facing the Atlantic Ocean. This coastline lies between latitude 4^{o} 10^{1} to 6^{o} 20^{1}N and longitude 2^{o} 45^{1} to 8^{o} 35^{1} E. The said coastal area is low lying with heights of not more than 3.0 m above sea level and is generally covered by fresh water swamp, mangrove swamp, lagoonal mashes, tidal channels, beach ridges and sand bars (Dublin- Green et al, 1997). The vegetation of the Nigerian coastal area is characterised by mangrove forests, brackish swamp forests and rain forests.

The Niger Delta's main environmental challenges result from oil spills, gas flaring and deforestation. Oil spills in the Niger Delta have been a regular occurrence, and the resultant degradation of the surrounding environment has caused significant tension between the people living in the region and the multinational oil companies operating there.

Sources Of Oil Spills

Most of the oil spill incidents reported in Nigeria occur in the mangrove swamp forest of the Niger Delta. Mangrove is one of the most productive ecosystems in the world with rich community of fauna and flora (Nenibarini, 2004.)

The sources/causes of spill incidents in Nigeria are mostly due to vandalisation of pipelines and other oil installations either as a result of civil disaffection with the political process or as a criminal activity (Nwilo and Badejo, 2005). Others sources are due to Equipment failure resulting from ageing, human error, corrosion, sabotage/theft and drilling operations.

Between 1976 and 1997, there have been 5334 reported cases of crude oil spillages releasing about 2.8 million barrels of oil into the land, swamp, estuaries and coastal waters of Nigeria (Dublin-Green et al. 1998).

From 1989 to 2007, CNA has responded to 72 oil spills as follows; Total (Elf) – 3; NNPC / PPMC – 15; Chevron /Texaco 3; NAOC – 27; SPDC – 20; Mobil- 3 and Intels(Third Party) – 1.

OIL SPILL RESPONSE CHALLENGES

Offshore Response

CNA's offshore response is limited to twenty nautical miles due to size of the Fast Response Vessels. However offshore spill equipment may be transported to far offshore spill site on third party Vessel of Opportunity(VOO) while the CNA Fast Response Vessels(FRV) and other shoreline clean up equipment are mobilized for possible shoreline/coastline clean up.

Offshore clean up activities are not easily susceptible to community disturbances etc. Hence there is relatively an enabling environment to clean up offshore spills.

Riverine/Inland Water Response

Oil Spill Clean up in these areas is not an easy one considering the nature of the area which is traversed and crisscrossed by a large number of rivers, rivulets, streams, canals and creeks.

One of the main challenges to clean up in this area is the brackish mangrove swamps. Philosophy of spill response in mangrove swamps makes manual cleans up in most of these areas the preferred choice. Access to these sites as well as restiveness of host communities are further challenges that make clean up in the Niger Delta unique.

Land Response

The Nigerian National Petroleum Corporation has 22 storage depots, 5,120 km of petroleum carrying pipeline and 24 pump stations traversed all over Nigeria (Ajuonuma, 2007). Majority of the pipelines are in the Northern part of Nigeria and access involves long travel times. There is presently one CNA Base in the North, Kaduna. The challenges for possible land spills are community issues and long travel distances, which affect response times.

With increasing militancy and communal hostilities it is becoming almost impossible to carry out clean up activities. A number of times, CNA personnel had been taken hostage and negotiation to release often take days to be accomplished. These no doubt are lost clean up times and have affected the morale and confidence of responders.

CONFLICT BETWEEN OIL COMPANIES AND HOST COMMUNITIES

This has had serious effect on clean up activities, as communities would not allow containment and clean up activities to take place until certain demands are met, using such spill as the opportunity to settle scores that had been bottled and long conceived. While negotiations are ongoing by oil companies, spilled oil continues to spread.

Intra and Inter-Community Conflicts

Incessant inter and intra community conflicts had resulted often time in delayed and or prevent response to clean up and in some cases physical attacks on CNA personnel. This had subsequently resulted in CNA requesting for adequate security and an enabling environment with which to contain and clean spill when called upon by members of the cooperative. While this is being resolved, spilled products continue to spread and cost untold damages and hardship on the people.

ENVIRONMENTAL CHALLENGES

Funding

While a number of member companies meet their financial contribution to CNA in a timely manner, others have not been able to meet their financial obligations and this has impaired effective operation of the cooperative. However, management has always strived to ensure that primary assignments of the cooperative are not affected.

Location of the Bases

CNA currently has two main bases and two satellite bases but there is need to strategically locate new bases near member facilities and to shorten response times. Towards this, efforts are ongoing to ensure more bases are opened within or near members' facilities so as to improve value of CNA to members.

Awareness

Most members of the Nigerian society are seemingly unaware of the concept of an emergency environmental company - Clean Nigeria Associates and hence company personnel and equipment are subject to a lot of bureaucratic scrutiny in times of emergency e.g. police, customs, immigration etc.

Moreover, the majority of oil industry personnel seem not to be properly enlightened on the activities of CNA and it's relation to their company. To most of them, CNA is just one of the contractors soliciting for contracts.

FUTURE OF CNA

The future of CNA will largely depend on the strict adherence to activities of the five year CNA Development Programme and more. In this regard, Phases 2 and 3 acquisition of spill response equipment will be accomplished which will eventually address members' offshore operational needs. Highlight of the future road map of CNA would inevitably achieve the following:

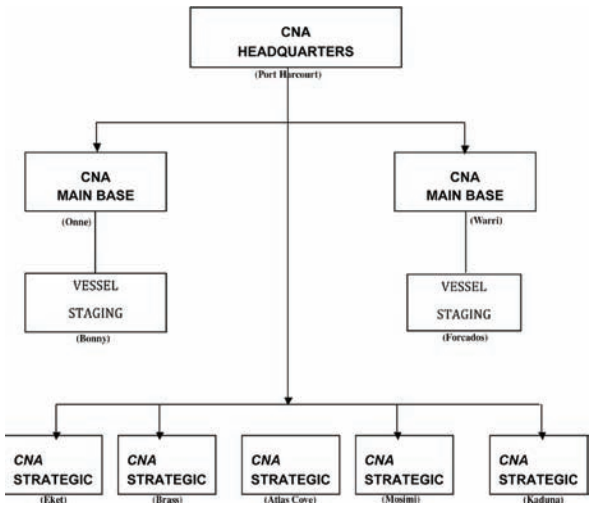
- Offshore vessels and acquisition of type 3 dispersants and other relevant dispersant spraying equipment for strategic distribution to members' facilities and airports as well as for use on vessel of opportunity (VOO).
- Phase 2 Base expansion to member facilities (Table 2) will further reduce response times.
- Moreover, there is in Nigeria numerous oil prospecting companies who are grouped under the umbrella name of Marginal Fields Operators Group a few of which have indicated interest to join CNA. Future streamlining of CNA admissions policy will enable interested members of this group to belong to CNA and this will in future reduce current members' subscriptions as well as solve funding problems.
- Sustainable Development programme known to all. Publicity of activities of member companies on their developmental activities in this case especially modern clean up techniques that restores impacted environment to her original state. Such publicity would calm frayed nerves of communities.
- Acceleration of the establishment of new bases to ensure that bases are strategically located close to member companies' facilities for shorter response time.
- Participation of CNA in all tier 2 spill within the scope of the organization's spill response philosophy.
- Patronage of CNA training programmes by member companies responders and their supervisors so as to generate some minimal revenue to CNA.
- Awareness of CNA activities by stakeholders through various fora:
  (a) Member companies' personnel that CNA is their investment and one of their companies as against the erroneous seemingly perceived contractor status.
  (b) Communities to know that the company is out to assist restore impacted soil to her original state for their normal economic activities.
  (c) Authorities such as police, customs, immigration to be aware of necessary regulations application to such contingency organization.
- Improve funding responsibilities by Member Company in line with budget provision.
- Research Activities on all spheres of oil spill response.
- Waste management activities for members if requested.
- Membership of this worthy effort of oil companies in Nigeria should be made mandatory.
- Finally CNA of the future intends to work towards reducing the number of current outsourced contracts in order to minimize operations cost and maintain an efficient strike team

TABLE 2

CNA BASE LOCATIONS AS SPECIFIED IN THE NATIONAL PLAN (WITH FORWARD VESSEL STAGING BASES)

TIER 2 RESPONSE ORGANISATION – CLEAN NIGERIA ASSOCIATES LTD/GTE (CNA)

CNA SPILL RESPONSE ORGANISATIONAL STRUCTURE



CONCLUSION

Clean Nigeria Associates, a company limited by guarantee of member companies is the first oil spill co-operative in Africa. Founded by signing of heads of agreement in 1981 and become operational in 1985, the member companies have invested over US $ 15 Million on oil spill equipment and materials to combat second tier oil spills in the entirety of the Federal Republic of Nigeria, the inland waterways therein, the territorial waters and continental shelf areas.

This cooperative is a demonstration of the genuine commitment of the oil producing companies (members) in Nigeria to ensure that their area of operation do not suffer untold hardship as a result of their operational activities, to ensure speedy response whenever a spill inevitably occurs. It is a noteworthy effort.

Most spills occur in the Niger Delta region of Nigeria, being the operating base of oil exploitation and exploration of the oil companies. Despite communities' restiveness in this region, CNA are still called upon for spill response even with attendant dangers of being taking hostage. CNA personnel had in the past been victims of this but prompt interventions by spiller companies had ensured no harm on affected personnel.

Current upgrade activities by CNA if strictly adhered to, will address offshore operations of members and be positioned to respond to spills outside the shores of Nigeria.

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