Workshop for the development and harmonization of coastal oil spill sensitivity maps in West and Central Africa

Accra, Ghana, 23 and 24 April 2007
Executive summary:
Regional workshop for the Development and Harmonization of Environmental Sensitivity Mapping in West and Central Africa

Host and date: Accra, Ghana, 23-24 April 2007 - Type: Regional

Organised by:
- International Maritime Organization (IMO)
- International Petroleum Industry Environmental Conservation Association (IPIECA)
- United Nations Industrial Development Organization (UNIDO)

Number of:
- participants: 55 participants
- countries represented: 16 of the 21 countries of the West and Central Africa WACAF region

The principal objectives of the Workshop were:
(a) Increase technical knowledge on Environmental Sensitivity Mapping in the region;
(b) Assess the existing environmental sensitivity maps in the region;
(c) Assess the agencies in the region able to provide information and technical knowledge for the development of maps; and
(d) Develop standard guidelines at regional level for Environmental Sensitivity Mapping.

The following results were obtained:
Training session:
- The training was particularly professionally handled and especially well focused to the needs of the audience. Most of delegates were decision makers from industry, ministries in charge of environment and of maritime transport.
- A good balance between technical aspect and global use of sensitivity maps for decision makers was carefully maintained.
- Industry and Government delegates gained a good understanding of the use of maps in oil spill preparedness and response.

Gap analysis / Action Plan
- Cameroun, Ghana, Republic of Guinea Conakry and Mauritania already have oil spill sensitivity maps at national level.
- The local resources and the technical knowledge are available locally in most of the countries.
- A regional centre for the development of Geographic Information System has been developed by the GEF/UNEP Guinea Current Large Marine Ecosystem project and it can provide free support for the other countries.
- Each country developed an action plan and made a short 5 min presentation of the main highlights of their project. This national action plan will be use as basis for next step.
The **highest priorities for action** are to:

- Designate a national authority to supervise/coordinate the development of oil spill coastal sensitivity mapping.

- Integrate sensitivity map into the national oil spill contingency plan:
  - Identify a budget and an organisation to develop the maps
  - Collect the data
  - Develop the maps and identify the most sensitive sites
  - Discuss the priorities for protection at political level and approve a ranked list of most sensitive sites.

- Develop partnership between oil companies and national authorities, and between neighbouring states.

- Use common methodology between west and central African countries to ensure harmonisation in the region.

**Key words:** coastal sensitivity mapping, sensitive sites, Environmental Sensitivity Index – ESI, coastline type, biological resources, human-use resources, Geographic Information System – GIS, scale, tactical, operational, strategic.

**Coordinator for:**

- For the Interim Guinea Current Commission (IGCC) Professor Chidi Ibe, Executive Secretary

- For IMO: Mr. Malamine THIAM, Marine Environnement Division IMO

- For the IMO/IPIECA GI WACAF Project: Mr. Philippe DE SUSANNE, Coordinator
### Table of content

1. Introduction .......................................................................................................................... 7
2. Objectives of the workshop ............................................................................................... 7
3. Programme of the workshop ............................................................................................. 8
4. Location, Dates, Roles and Participants ............................................................................ 8
5. Results and Outcomes ...................................................................................................... 9
6. Recommendations of the Workshop .................................................................................. 11
7. Appendices ......................................................................................................................12
   7.1 List of participants .................................................................................................. 12
   7.2 Opening speech of the representative of the IMO ................................................. 20
   7.3 Programme of the workshop .................................................................................. 22
   7.4 Summary of presentations and discussions .............................................................. 24
       7.4.1 From Friday 20 to Sunday 22 April ................................................................. 24
       7.4.2 Monday 23 April ............................................................................................ 24
       7.4.3 Tuesday 24 April ........................................................................................... 26
       7.4.4 Friday 27 April ............................................................................................... 27
   7.5 Outcome of the questionnaires ................................................................................. 28
   7.6 List of abbreviations and acronyms used in the report ............................................. 37
   7.7 Photos of the workshop ............................................................................................. 38
   7.8 Sources and references ............................................................................................. 40
Atelier pour le développement et l'harmonisation des cartes de vulnérabilité des côtes de l'Afrique de l'Ouest et du Centre

Accra, Ghana, 23 - 24 April 2007
1 INTRODUCTION

This regional workshop for the development and standardization of coastal sensitivity maps in West and Central Africa is organized within the framework of the « GI WACAF » project – Global Initiative for West and Central Africa. This is a program through which IMO, IPIECA and various other partners work together to encourage and facilitate improvement for oil spill preparedness and response measures.

The workshop took place from the 23rd to the 24th of April 2007, hosted by the “Interim Guinea Current Commission” (IGCC) with the assistance of the International Maritime Organization (IMO) and the International Petroleum Industry Environment Conservation Association (IPIECA), within the framework of the « GI WACAF » project (Global Initiative for West and Central Africa).

This workshop shows a successful first activity being jointly organized by the Guinea Current Large Marine Ecosystem project, implemented by the United Nations Industrial Development Organization (UNIDO) and the « GI WACAF » project.

2 OBJECTIVES OF THE WORKSHOP

The delegates met with the following objectives:

- To enhance knowledge about coastal oil spill sensitivity mapping in the following areas:
  - Role of mapping in oil spill preparedness and response
  - Methods and techniques for sensitivity mapping,
- To inventory the existing sensitivity maps in the West and Central Africa region;
- To develop national action plans for the implementation of such maps;
- To inventory agencies with mapping expertise;
- To develop regional guidelines for the development of standardized sensitivity maps.
3 PROGRAMME OF THE WORKSHOP

The first day of the workshop was dedicated to:

- Presentations about the underlying principles of the coastal oil spill sensitivity maps, taking into account the Environmental Sensitivity Index (ESI), currently defined by the U.S. Office of Response and Restoration of the NOAA (National Oceanic and Atmospheric Administration) and recognized as an internationally accepted standard,
- Presentations by various delegates of the existing sensitivity mapping projects and/or tools.

The second day was dedicated to:

- The presentation of a general action plan for the development of sensitivity maps
- Presentations on sensitivity mapping tools (e.g. Geographical Information Systems)
- Inventorying existing sensitivity maps and resources in the GI WACAF project region,
- Setting up the outlines of country specific action plans and the development of regional guidelines for the project area

4 LOCATION, DATES, ROLES AND PARTICIPANTS

The workshop took place in the premises of the Interim Guinea Current Commission in the meeting room located on the first floor.

Experts from IMO/IPIECA coordinated the workshop. They were Mr Malamine Thiam (IMO), Mr. Philippe de Susanne (IMO/ IPIECA project) as well as Mr. Jean-Yves Huet, Dr. Lindsay Page-Jones and Mr. Christophe Carrié (IPIECA consultants for the GI WACAF Project).

See program of activities in appendix 7.3.

The Interim Guinea Current Commission took charge of the organization of the workshop as well as all associated logistics during the two days (coffee breaks, lunches, equipment for audiovisuals, simultaneous translation, Internet access, provision of a few internet linked computer workstations, printers and photocopiers).

A total number of 55 participants attended the workshop, coming from 16 of the 21 countries in the GI WACAF region. These participants represented government organizations and industry.

See list of participants in appendix 7.1
5 RESULTS AND OUTCOMES

A regional view of the status of development of oil spill sensitivity maps is presented shortly below. A more detailed analysis by country is presented in appendix Error! Reference source not found..

Analysis of the status of development of oil spill sensitivity mapping in the countries along the coastline of West and Central Africa (Accra – Ghana workshop, April 2007)

Development of sensitivity maps

Among the 21 countries in the GI WACAF Project area, Ghana, Cameroon and Mauritania have already developed sensitivity maps which are integrated in the national plan. In several of the remaining countries, sensitivity maps are under development.

Numerous countries have developed sensitivity maps for other themes (e.g. Ivory Coast for coastal erosion problems). The information in such documents can be used for the development of oil spill sensitivity maps.

In a number of cases, the oil industry has also developed maps, mainly focused on the area of operations.
National competent authority designated and recognized

Although the majority of the countries in the area have designated a national competent authority for oil spill preparedness and response, there is a need for a unique organization identified as the national competent authority to be legally and officially nominated (by decree) in numerous countries.

In order to avoid duplication of efforts (e.g. for acquisition of satellite imagery and the production of maps), the need for cooperation between various government organizations (ministries, etc.) at national level was also identified by the delegates.

The need for centralization of the data was also mentioned, at national level for baseline data, as well as at the West and Central Africa region level once the sensitivity maps will have been completed.

Ratification of the OPRC 90 convention

Although this convention provides the legal background for oil spill preparedness, less than 50% of the countries in the project area have ratified the OPRC 90 convention. The others relevant international conventions (i.e. CLC 92, FUND 92 and Intervention 69) should also be ratified as soon as possible.

National legislation in place

In more than half of the countries, an appropriate national legislation in line with the provisions of the international conventions needs to be implemented, and national oil spill plan needs to be officially approved and implemented.

Other data, available maps and identification of sensitive areas.

Even if few countries have developed sensitivity maps, topographic maps and data on sensitive biological and socio-economic resources are generally available in all the countries.

Geographical Information Systems expertise

More than 60% of the countries have mentioned existing national expertise for the development of GIS, which could be used for the development of the sensitivity maps.

This GIS and mapping expertise will need to be reinforced through specific training sessions and it was recommended that these are carried out at sub-regional level through English speaking and French speaking workshops.

National expertise

In more that 70% of the countries, expertise was identified which could be used for the development of the sensitivity maps. This expertise is available from organizations such as:

- Ministries (Environment, Transport, Petroleum, etc.)
- National geographic institutes, Universities
- Various research institutes (ecology, fisheries, oceanographic, environment, etc.)
- Oil companies and oil industry groups: ACEPA, AOPC, UPEGA, OPTS…

The need for the development of government-industry (and government to government) partnerships were frequently mentioned by delegates in order to facilitate data collection and/or the development of the maps.
6 **RECOMMENDATIONS OF THE WORKSHOP**

A series of recommendations was developed by the delegates during the workshop in order to provide guidance to the countries in the WACAF region and ensure a standardized development of the oil spill sensitivity maps for West and Central Africa.

It is recommended that the National Competent Authority for oil spill cooperation, preparedness and response:

- Be officially nominated by a legal document (e.g. decree) in each country of the region
- Be responsible for:
  - The supervision of the development of coastal oil spill sensitivity atlas at national level and the coordination at regional level,
  - The production, diffusion and regular updating of the atlas;
- Leads the country towards the ratification and implementation of the relevant international conventions (OPRC 90);
- Designates a national organization responsible for the technical development of the maps;
- Identify the national needs in terms of personnel, resources and training;
- Host the technical national and/or regional workshops for the development of the atlas;
- Promote the use of the Environment Sensitivity Index (ESI) methodology in order to ensure standardization among the countries of the West and Central Africa region and that maps include four themes (see Regional Guidelines):
  - Type of shoreline and ESI sensitivity,
  - Presence of biological resources, sensitive to the effect of oil spills,
  - Presence of socio-economic activities susceptible of being affected by the effect of an oil spill,
  - Identification of logistical and operational resources which might be of use during the response to an oil spill (e.g. location of access points, equipment stockpiles, etc.);
- Ensures that Geographical Information Systems software is used for the development and distribution of sensitivity maps (see Regional Guidelines);
- Identifies financing mechanisms needed to cover costs for data collection, development of the maps, distribution of the atlas and regular updating of the maps;
- Facilitates the collection of the data needed for the development of the maps that are available at national and international levels by putting in place agreements for access to data between government and the industry, the local institutes, the universities, etc. (see Regional Guidelines);
### 7 APPENDICES

#### 7.1 LIST OF PARTICIPANTS

<table>
<thead>
<tr>
<th></th>
<th>Country</th>
<th>Name</th>
<th>Position/Position</th>
<th>Address</th>
<th>Telephone/Cell/Fax</th>
<th>Email/Emails</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Angola</td>
<td>Maria Martins</td>
<td>Environmental Advisor ACEPA Representative</td>
<td>Av. Rainna Ginga, 127, 8&lt;sup&gt;th&lt;/sup&gt; Floor Luanda, Angola</td>
<td>+244222637608 / +244912704254</td>
<td><a href="mailto:maria.martins@bp.com">maria.martins@bp.com</a></td>
</tr>
<tr>
<td>2</td>
<td>Angola</td>
<td>Bomba Bazika Sangolay</td>
<td>Head of Environment and Health of Aquatic Ecosystems Instituto Nacional de Investigacao Pesqueira (INIP)</td>
<td>Rua Murtala Mohamed ILHA de Luanda, CP 2601 Luanda</td>
<td>+244309077 Cell: +244923710057 Fax: +244309731</td>
<td><a href="mailto:bbsangs@gmail.com">bbsangs@gmail.com</a> or <a href="mailto:bbsangs@hotmail.com">bbsangs@hotmail.com</a></td>
</tr>
<tr>
<td>3</td>
<td>Angola</td>
<td>Maria Eugenia Domingas Luís</td>
<td>Chefe de Departamento</td>
<td>Rua Nossa Sra da MUXIMA No. 47 Ministerio da Cultura Museu Nacional Historia Natural</td>
<td>+222 338907+244222334054 / 222-334055 Fax: +244222338907</td>
<td><a href="mailto:jenyluis@hotmail.com">jenyluis@hotmail.com</a></td>
</tr>
<tr>
<td>4</td>
<td>Angola</td>
<td>Ana Paula Dos Santos Correa Victor</td>
<td>Directora</td>
<td>Museu Nacional de Historia Natural Ministerio da Cultura Rua Nossa Sra da Muxima No.47 Luanda – Angola</td>
<td>+24912514755 / 923344913/222334054 / 55 Fax: +244222338907</td>
<td><a href="mailto:paulavictor@hotmail.com">paulavictor@hotmail.com</a></td>
</tr>
<tr>
<td>5</td>
<td>Benin</td>
<td>Chabi Theophile Worou</td>
<td>Directeur de Cabinet Ministère de l'Environnement et de la Protection de la Nature Address: 01 BP 3621 Cotonou 64 Tel: +229 21314137 Fax:</td>
<td>(229) 21315081</td>
<td>Email: <a href="mailto:theo_worou@yahoo.fr">theo_worou@yahoo.fr</a></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Benin</td>
<td>Roger Djiman</td>
<td>Directeur</td>
<td>Immeuble Soglo (Annexe) Rue Maro-Militaire Centre de Recherches Océanologiques Cotonou, Bénin</td>
<td>+2299139546 / +22995957488 Fax: +22921323671</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Country</td>
<td>Name</td>
<td>Position</td>
<td>Address</td>
<td>Phone Numbers</td>
<td>Fax</td>
</tr>
<tr>
<td>---</td>
<td>---------</td>
<td>-----------------------</td>
<td>---------------------------------</td>
<td>----------------------------------</td>
<td>---------------</td>
<td>-----------</td>
</tr>
<tr>
<td>7.</td>
<td>Benin</td>
<td>Bernardino do Sacramento</td>
<td>Chef du Service de la Reglementation</td>
<td>Direction de la Marine Marchande</td>
<td>+22995960618/+22997897911/+22921316111/+22921314669</td>
<td>+22921315645</td>
</tr>
<tr>
<td>8.</td>
<td>Cameroon</td>
<td>Samuel Billong Bisseck</td>
<td>HSE Manager</td>
<td>Total E&amp;P Cameroun</td>
<td>+2373405873/+2373402228/+2379686095</td>
<td>+2373400020</td>
</tr>
<tr>
<td>9.</td>
<td>Cote d'Ivoire</td>
<td>Henri-Michel Acho</td>
<td>General Manager</td>
<td>Afrique Expertise Survey</td>
<td>+22522422958/+22504130181</td>
<td>+22522422958</td>
</tr>
<tr>
<td>10.</td>
<td>Cote d'Ivoire</td>
<td>Ben Hassan Outtara</td>
<td>Marine Technical Advisor (West Africa)</td>
<td>Shell Oil Product – West Africa</td>
<td>+22507022805/+22521752760</td>
<td>+22521274499</td>
</tr>
<tr>
<td>11.</td>
<td>Cote d'Ivoire</td>
<td>Niagne Martin Dibi</td>
<td>Point Focal de la Convention d’Abidjan</td>
<td>Ministère de l’Environnement et des Eaux et Forets</td>
<td>+22507938626/+22520211183</td>
<td>+22520211183</td>
</tr>
<tr>
<td>12.</td>
<td>Congo</td>
<td>Jules Arsene Mynyngou</td>
<td>Chef de Département Environnement</td>
<td>Total E&amp;P Congo</td>
<td>+242946577</td>
<td>+242956714</td>
</tr>
<tr>
<td>13.</td>
<td>Congo</td>
<td>Kali-Mavoungou Bruno</td>
<td>Chef de Service de la Sécurité Maritime</td>
<td>Direction Générale de la Marine Marchande</td>
<td>+2425394638</td>
<td>+2425394638</td>
</tr>
<tr>
<td>No.</td>
<td>Country</td>
<td>Name</td>
<td>Position</td>
<td>Address</td>
<td>Contact Information</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Congo D.R.</td>
<td>Jean-Paul Mwamba Nyembo</td>
<td>Directeur</td>
<td>CICG/RDC, 145 Av de la Paix Gombe, 17 Av des Cliniques (Ex-Papa I Leo), Kinshasa, Congo D.R.</td>
<td>Tel: +243997816451 / +243818145118 Email: <a href="mailto:myembordc@yahoo.fr">myembordc@yahoo.fr</a></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Equatorial Guinea</td>
<td>Simon Osa Adugu</td>
<td>Director General</td>
<td>Ministerio de Pesca y Medio Ambiente, Direccion General de Aguas y Costas, Republica de Guinea Ecuatorial, Malabo – Guinea Ecuatorial</td>
<td>Tel: +240253575 /+240 093449 Email: <a href="mailto:osa2adugu@yahoo.es">osa2adugu@yahoo.es</a></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>France</td>
<td>Jean-Yves Huet</td>
<td>OTRA</td>
<td>38 Rue Jim Sevellec, 29 200 Brest, France</td>
<td>Tel: 33616864650 Email: <a href="mailto:otra@mweb.co.za">otra@mweb.co.za</a></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>France</td>
<td>Lindsay Page-Jones</td>
<td>Technical Advisor</td>
<td>OTRA, 7 Rue Perdriel Vaissiere 29200 Brest, 38 Rue Jim Sevellec 29200 Brest, France</td>
<td>Tel: 33661949564 Fax: +33298151114 Email: <a href="mailto:l.page-jones@libertysurf.fr">l.page-jones@libertysurf.fr</a></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Gabon</td>
<td>Mombe Nguema Julien</td>
<td>Directeur General Adjoint</td>
<td>Marine Marchande, BP 803 Libreville, Ministère de la Marine Marchande et des Equipements Portuaires, Gabon</td>
<td>Tel: +24106243826 / +241 07146292 /+241720042 Email: <a href="mailto:jmombe@yahoo.fr">jmombe@yahoo.fr</a></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Gabon</td>
<td>Solange Loubamono</td>
<td>Conseiller, Chef de Departement Developpement Durable, Environnement, parcs Nationaux, Tourisme du Premier Ministre , Chef de Gouvernement du Gabon</td>
<td>Tel: (+241) 07379874 Fax: (+241) 721370 Email: <a href="mailto:loubamonosolange@yahoo.fr">loubamonosolange@yahoo.fr</a> / <a href="mailto:loubamono@hotmail.com">loubamono@hotmail.com</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Ghana</td>
<td>Georgina Tackie (Mrs)</td>
<td>Project Director</td>
<td>Marine Consultants, P. O. Box 1423, Accra</td>
<td>Tel: +233244331309/+23321773891 – 97 Fax: +23321773899 Email: <a href="mailto:ginahans@hotmail.com">ginahans@hotmail.com</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ghana</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 21. | **Jacques Abe**  
Environment Expert  
IGCC/GCLME  
No.1 Akosombo Street  
Airport Residential Area  
Accra  
Tel: +23321781225  
Fax: +23321781226  
Email: j.abe@gclme.org |  |
| 22. | **Mamudu Abdulai-Saiku**  
Officer In Charge Academic Affairs  
Regional Maritime Academy  
P. O. Box GP 1115  
Accra  
Tel: +23321712775/712343/712998/+233208179768  
Fax: +23321712047  
Email: alsaiku@yahoo.com.sh |  |
| 23. | **Carl Fiati**  
Principal Programme Officer  
Environmental Protection Agency  
P. O. Box M326  
Accra  
Tel: +23321664697/8 / +233-277403072  
Fax: +23321662690  
Email: cfiati@epaghana.org |  |
| 24. | **Rudolph Sandy Kuuzegh**  
Director  
Ministry of Local Govt. Rural Development & Environment  
P. O. Box M.232  
Accra  
Tel: +23321660005  
Fax: +23321660005 |  |
| 25. | **Capt. Kofi Micah**  
Deputy Director (Environment & Safety Standards)  
Ghana Maritime Authority  
PMB 34 Ministries, Accra  
Tel: +233244264596/+23321684393  
Fax: +23321308920/+23321677702  
Email: kofimicah@yahoo.co.uk |  |
| 26. | **Daniel S. Amlalo**  
Director, Field Operations  
Environmental Protection Agency  
P. O. Box M. 326  
Accra  
Tel : +23321664697/8  
Fax : +23321662690  
Email : damlalo@epaghana.org |  |
| 27. | **James Benjamin Gaisie**  
Estate/Environment Manager  
Ghana Ports & Harbours Authority  
P. O. Box 488  
Tema  
Tel: +23322216473/+233244529011  
+23322202631/9 Ext. 3050  
Fax: +23322204136  
Email: jgaisie@ghanaports.net / paapagaisie@yahoo.com |  |
<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Name</th>
<th>Title/Position</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Ghana</td>
<td>Michael Luguje</td>
<td>Ag. Regional Coordinator AFrique de l’ouest et du Centre (Anglophone) IMO Office Accra Tel : +233244145644 Email : <a href="mailto:maluguje@yahoo.co.uk">maluguje@yahoo.co.uk</a></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>République de Guinée</td>
<td>Soriba Toure</td>
<td>Chef Service Service d’Intervention d’urgence et Lutte au Centre de Protection Environnementale du Milieu Marin et cotier Ministère de l’Agriculture Elevage Environnement eaux et Foret Guinée Conakry Tel : + 64294821 Email : <a href="mailto:soribatoure2006@yahoo.fr">soribatoure2006@yahoo.fr</a></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>République de Guinée</td>
<td>Mamadou Moudjitaba Sow</td>
<td>Chef de la Section Pollution et Marchandises dangereuses Direction Nationale de la Marine Marchande BP 06 Conakry République de Guinée Tel : +22464244692 Fax : +224433577 Email : <a href="mailto:moudjitalatmci@yahoo.fr">moudjitalatmci@yahoo.fr</a></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Guinée -Bissau</td>
<td>Tipote Pedro</td>
<td>APGB – Administration of Port of Guinea Bissau Av. 3 de Agosto CP 693 – Bissau Guinea Bissau Tel: +2457200603/+2456614783 Fax: +245204111/+245202962 Email: <a href="mailto:ptipotepeco@hotmail.com">ptipotepeco@hotmail.com</a></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Guinée -Bissau</td>
<td>Mario Biague</td>
<td>Coordinateur Cellule d’Evaluation d’Impact Environnemental Av. Pansau Na Isna Cosqueiro, Bissau Tel : +245 7219726 / +245 6635494 /+245207118 Email: <a href="mailto:mbiaigue@yahoo.fr">mbiaigue@yahoo.fr</a> / <a href="mailto:mbiague@hotmail.com">mbiague@hotmail.com</a></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Liberia</td>
<td>Yvonne Clinton</td>
<td>Deputy Commissioner for Technical Services Bureau of Maritime Affairs P. O. Box 10-9042 Monrovia, Liberia Tel: 2316510031 Email: <a href="mailto:kaulah2002@yahoo.com">kaulah2002@yahoo.com</a> / <a href="mailto:kaulah@hotmail.com">kaulah@hotmail.com</a></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Liberia</td>
<td>David L. Wiles</td>
<td>Environmental Protection Agency (EPA) 4th Street Sinkor, Monrovia Liberia Monrovia, Liberia Tel: +23106527484 Email: <a href="mailto:davidlwiles@yahoo.com">davidlwiles@yahoo.com</a></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Country</td>
<td>Name</td>
<td>Position/Department</td>
<td>Address</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>---------------</td>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>35.</td>
<td>Nigeria</td>
<td>Chijioke Amadi</td>
<td>Programme Assistant</td>
<td>ISEPA/UNIDO Isiukwuato Street, Prefab, Aladinma, PMB 1159 Owerri</td>
</tr>
<tr>
<td>36.</td>
<td>Nigeria</td>
<td>Ihemejeh Ugochukwu C.</td>
<td>National Programme Assistant, GCLME/IGCC UNIDO Project Office</td>
<td>No.25 Lugard St. Ikoyi, Lagos 48/50 Oladimeji Street Aguda Surulere Lagos Nigeria</td>
</tr>
<tr>
<td>37.</td>
<td>Nigeria</td>
<td>Joseph Siewe</td>
<td>Interpreter</td>
<td>Multi-Tongue &amp; Ear professionals 3 Eletu-Odibo Street Abule-Ijesha, Yaba Lagos, Nigeria.</td>
</tr>
<tr>
<td>38.</td>
<td>Nigeria</td>
<td>Olugboye Oyebola</td>
<td>HES Engineer, Chevron Nigeria Ltd.</td>
<td>2 Chevron Drive, Lekki Peninsula VI Lagos, Nigeria</td>
</tr>
<tr>
<td>39.</td>
<td>Nigeria</td>
<td>Uche Moghalu</td>
<td>Imo State University Owerri, Imo State Chemistry Department, Imo State</td>
<td>Tel: +2348023416789</td>
</tr>
<tr>
<td>40.</td>
<td>Nigeria</td>
<td>Gidado Dauda Abiodun</td>
<td>Assistant Director National Oil Spill Detection and Response Agency</td>
<td>NAIC House, Central Area, Garki, Abuja</td>
</tr>
<tr>
<td>41.</td>
<td>Nigeria</td>
<td>Idris Olubola Musa</td>
<td>Deputy Director/Head Oil Spill Detection Dept National Oil Spill Detection and Response Agency (NOSDRA) 5th Floor, NAIC House PMB 145, Garki, Abuja Nigeria.</td>
<td>Tel: +234496714928 / +2348033153547 / <a href="mailto:iomusa2003@yahoo.com">iomusa2003@yahoo.com</a></td>
</tr>
<tr>
<td>42.</td>
<td>Nigeria</td>
<td>Chinenyee Ebirim</td>
<td>Chemistry Department Imo University Owerri Nigeria</td>
<td>Tel: 2348036754932</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **43. Nigeria** | **Nnodimele Ethelbert** | General Manager  
Imo State Environmental Protection Agency (ISEPA)  
GCLME Regional Centre for Environmental Pollution Monitoring and Assessment  
PMB 1159, Owerri  
Nigeria  
Tel: +2348032577073 / +23483234986  
Email: isepauunido.org@yahoo.com / nnodimethel@yahoo.com |
| **44. Sierra Leone** | **Philip S.J. Lukuley** | Executive Director  
Government Wharf  
P. O. Box 313  
Freetown, Sierra Leone  
Tel: +23276601805/+23222221211  
Fax: +23222221215 |
| **45. Sierra Leone** | **Martin Frank Martin** | Oil Movement Officer  
Petroleum Unit  
4th Floor, Bank of Sierra Leone Building  
Freetown, Sierra Leone  
Tel: +23230632705 / +23222229481  
Email: fsdmartin@yahoo.com |
| **46. Sierra Leone** | **Mr. Mohamed Thullah** | Field Supervisor,  
Organization For Research and Extension of Intermediate Technology (OREINT),  
1 Lower Allen Town Road, Calaba Town (Head Quarters)  
48 Wellington Street  
Free Town  
Tel: 033 – 802325/224948  
Email: mohameddennis@yahoo.co.uk |
| **47. Sao Tomé e Principe** | **De Ceita Vaz Do Rosario Manuel Fernandes** | Technitien  
Direction de l’Environnement  
Oque-Dei-Bei  
Avenida Waba ....  
Sao Tome  
Tel: +239225271 - +239 911266  
Fax: +239227156  
Email: manrosario2000@yahoo.com.br |
| **48. Togo** | **Doungbe Affo** | Direction Generale du Port Lome  
Port Autonome de Lome  
Capitainerie, Pal BP 1225  
Lomé Togo  
Tel: 2282274742 / +2289047089  
Fax: 2282274169 |
| **49. Togo** | **Yawo Jonky Tenou** | Ingenieur en Gestion de l’Environnement  
Direction de l’Environnement  
247, Rue des Nimes BP 4825  
34, Rue Nos Preles Be Pa de Souza Lome BP 4825  
Tel: +2283388206 / +2282213321/9545450  
Fax: +2282220333  
Email: ytenou1@yahoo.fr |
50. **Togo**  
**Henne Hennis**  
Togo & Shell  
Cive Millennium Vilbig, Lome  
BP 797, Route Aneho, Lome  
Lomé Togo  
Tel: +2289256074 / +2202237200  
Email: Hennis.henne@togosh.simis.com

51. **United Kingdom**  
**Philippe De Susanne**  
IPIECA  
GI WACAF Project Manager  
209 215 Blackfriads Road  
London W1H1  
Tel: +44207725207 / +442717897447  
Cell: +447717897447  
Fax: +442717897447  
Email: philippe.de.susanne@IPIECA.org

52. **United Kingdom**  
**Malamine Thiam**  
Technical Officer  
International Maritime Organisation  
4 Albert Embankment  
London SE1 7SR  
Great Britain  
London  
Tel: +442075873188  
Fax: +442075873210/61  
Email: mthiam@imo.org

53. **United States**  
**Wolfgang Konkel**  
Environmental Scientist  
ExxonMobil  
1545 RT 22 East  
Annan Daze, W5, USA  
Tel: +19087301015  
Fax: +19087301190  
Email: wolfsang.j.konkel@exxmobil.com

54. **United States**  
**Peter Samuels**  
Chevron  
Health Environment Safety Security  
60001 Bollinger Canyon Road  
P. O. Box 6049 San Ramon Ca 94583  
West African Gas Pipeline Company  
1st Crescent Dzorwulu, Accra  
Email: psamuels@wagpco.com

55. **France**  
**Jean-Francois Levy**  
IMO Consultant  
9 Rue Anrole France  
94270 le Kremlin ..  
c/o Malamine Thiam  
IMO  
4 Albert Embankment London  
Tel: 33149606957 (Mobile - +336855329910)  
Email: jean-francois.levy@wanadoo.fr
Mr. Chairman, Distinguished Guests, My esteemed colleagues and dear friends, Ladies and Gentlemen,

It is a great honour for me to be with you today at the beginning of these most timely meetings, the first of which aiming at addressing one of the many important issues of contingency planning – Environment sensitivity mapping - and the second at the establishment of a regional agreement on contingency planning in the GCLME region.

I bring to you the greetings and best wishes from the Secretary - General of the International Maritime Organization, Mr. Efthimios Mitropoulos. He has requested me to extend to UNEP, the Global Environment Facility, UNIDO and especially to the Secretariat of the Interim Guinea Current Commission, our partners in the GCLME Project and host for the meeting, his profound gratitude for their kind co-operation and generous support. To our honourable guests, he kindly requested to extend his gratitude for their interest and support to this very important process and reiterates his appeal to them for their continued support.

As I am sure you are all aware, these meetings have been organized at a time when maritime safety and the protection of the marine environment are receiving renewed attention and active support from all countries and this is particularly true in the GCLME region and the West and Central Africa as a whole.

The first UNIDO/IMO/IPIECA event inaugurates the newly established partnership between our three entities and comes as a new positive step in the direction of the already strong partnership between UNIDO and IMO. At this juncture I would like to also extend to all present, greetings and best wishes for a successful week from the General Secretary of the International Petroleum Industry Environmental Conservation Association (IPIECA).

As you will recall, this two-day workshop aims at addressing the technical aspects of Environmental Sensitivity Mapping; assessing the existing environmental sensitivity maps in the region; assessing the agencies in the region able to provide information and technical knowledge for the development of maps; and developing standard guidelines for Environmental Sensitivity Mapping for use by the relevant entities of the region.

With regard to the second event Mr. Chairman, you will note that the Convention for Co-operation in the Protection and development of the marine and coastal environment of the West and Central African region – the Abidjan Convention 1981, states that “the contracting
Parties shall co-operate in taking all necessary measures to respond to pollution emergencies in the Convention area and to reduce or eliminate pollution or threat of pollution resulting therefrom. To this end, the contracting Parties shall, individually and jointly, develop and promote contingency plans for responding to incidents involving pollution or the threat thereof in the Convention area.”

The Emergency Protocol to the Abidjan Convention provides further details for the scope and provisions of this co-operation.

The purpose of the first Meeting of the Technical Advisory Group is to develop a framework for co-operation between the countries of the Guinea Current Region in cases of major pollution incidents; the idea being to later extend the framework to the whole West and Central Africa Region.

The main objective of this first meeting is to consider and amend as appropriate, two very important draft documents, which together and when adopted by the countries of the region, will provide the basis for all future co-operation and assistance in cases of major marine pollution incidents.

The first document to be considered is the draft sub-regional oil spill contingency plan, which will form the operational background for co-operation between the countries of the region. The proposed draft plan was developed by IMO with due consideration to the relevant international Guidelines and experiences gained from similar regional plans in other parts of the world.

The second document is a sub-regional instrument or agreement, which provides the legal background for future co-operation. This document was developed as a draft document under the Abidjan Convention.

Mr. Chairman, I would like to recall that the second event of this week is a meeting of national and international experts, who have been called together to develop a number of documents from a technical point of view.

When this Meeting ends on Friday, it is the wish of IMO and indeed UNIDO that substantial progress is made in the development of the documents. We invite you to participate in the discussions of the draft documents to also ensure they are in compliance with international regulations and guidelines and, as far as this meeting can agree, they take into consideration your national views and expectations on a framework for co-operation within the region.

Finallty Mr. Chairman, it is hoped that at the end of this week, the two events will have achieved fully their goals.

Once again from UNIDO, IMO and IPIECA, welcome to these two events and my best wishes for very fruitful meetings.

I thank you for your kind attention.

Source: Malamine Thiam (OMI)
### 7.3 Programme of the Workshop

**DAY 1: Training and Assessment of the existing situation**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.00</td>
<td><strong>Opening ceremony and Course introduction</strong></td>
</tr>
<tr>
<td></td>
<td>Registration of participant</td>
</tr>
<tr>
<td></td>
<td>Presentation of GI WACAF and role in national and regional sensitivity mapping projects</td>
</tr>
<tr>
<td></td>
<td>Presentation of the objectives of the course, of the lecturers and all course participant</td>
</tr>
<tr>
<td>10.30</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11h00</td>
<td><strong>Introduction to coastal sensitivity mapping</strong></td>
</tr>
<tr>
<td></td>
<td>Interest and use of sensitivity mapping, based on a fictional example</td>
</tr>
<tr>
<td></td>
<td>The impacts of oil spills as the base of sensitivity mapping.</td>
</tr>
<tr>
<td></td>
<td>Use and benefits of Coastal sensitivity maps for oil spill response and preparedness.</td>
</tr>
<tr>
<td>11.30</td>
<td>Environmental Sensitivity Index - ESI (see Appendices 3.3)</td>
</tr>
<tr>
<td></td>
<td>Assessing the environmental sensitivity of the shoreline is necessary to ensure that oil spill response strategies and techniques for shoreline protection and clean-up are chosen in order to minimize the impact on the environment.</td>
</tr>
<tr>
<td></td>
<td>The sensitivity is measured according to an international recognized index: the ESI (Environmental Sensitivity Index, maintained by the U.S. Office of Response and Restoration NOAA) which will be described in this part.</td>
</tr>
<tr>
<td>12.00</td>
<td><strong>Sensitive biological resources, e.g. Habitats, Species</strong> (see Appendices 3.4)</td>
</tr>
<tr>
<td></td>
<td>The impact of oil on sensitive biological resources can reflect on socio-economic activities (spawning ground example). These habitats must be identified so that they can be protected. Priority for their protection is done according to their specific degree of sensitivity and their importance (richness of the species and ecological value). Mapping these habitats and assessing their sensitivity facilitates the definition of oil spill response strategies.</td>
</tr>
<tr>
<td>12.30</td>
<td>Lunch break</td>
</tr>
<tr>
<td>13.30</td>
<td><strong>Sensitive Socio-Economic activities</strong> (see Appendices 3.5)</td>
</tr>
<tr>
<td></td>
<td>All socio-economic activities can be more or less affected by an oil spill. The identification of and a classification of these activities facilitates the choice of oil spill response strategies for their protection.</td>
</tr>
<tr>
<td>14.00</td>
<td><strong>Mapping principles for coastal sensitivity maps.</strong></td>
</tr>
<tr>
<td></td>
<td>The importance of producing clear and easy to use cartographic documents.</td>
</tr>
<tr>
<td>14.15</td>
<td><strong>Sensitivity mapping for decision makers</strong> (see Appendices 3.2)</td>
</tr>
<tr>
<td></td>
<td>This session develops the standard guidelines for the elaboration of sensitivity maps, aimed at the decision makers. Particularly, various methods to produce strategic maps taking into account Environmental Sensitivity Index, Sensitive biological resources and Sensitive Socio-Economic activities to identify the most sensitive shorelines will be presented. The use and limitation of complex index (aggregating ESI, biological resources and socio-economic activities into one global sensitivity index) will be discussed.</td>
</tr>
<tr>
<td>15.00</td>
<td><strong>Towards an operational mapping for responders on site</strong> (see Appendices 3.6)</td>
</tr>
<tr>
<td></td>
<td>Guidelines for the development of operational coastal sensitivity maps dedicated to the oil spill responders on site, as an assistance to the oil spill response operations and as environmental guidelines.</td>
</tr>
<tr>
<td>15.30</td>
<td>Coffee break</td>
</tr>
<tr>
<td>16.00</td>
<td><strong>Result of inventory of the sensitivity maps in the region</strong></td>
</tr>
<tr>
<td></td>
<td>Presentation of the state of the sensitivity maps in the WACAF region based on the results of the questionnaire</td>
</tr>
<tr>
<td>16.15</td>
<td><strong>Presentation of existing maps</strong></td>
</tr>
<tr>
<td></td>
<td>Presentation of existing maps from National authorities and oil industry:</td>
</tr>
<tr>
<td></td>
<td>• Mauritania, Cameroun, Angola Nigeria</td>
</tr>
<tr>
<td></td>
<td>• ACEPA, Assoc. Petr. Prod. Angola</td>
</tr>
<tr>
<td></td>
<td>• UPEGA, Union Petr. Gabon</td>
</tr>
<tr>
<td></td>
<td>• AOPC, Assoc. Operators Petr. Gabon</td>
</tr>
<tr>
<td>17.00</td>
<td>End of day</td>
</tr>
</tbody>
</table>

After dinner
Presentation by OTRA of the mapping projects in Angola (for TEPA and Chevron). GIS format, Paper atlas, web mapping.
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.00</td>
<td><strong>Presentation of the implementation of coastal sensitivity mapping project and Action Plan</strong>&lt;br&gt;This presentation will be divided in two sections which describe the components of coastal sensitivity mapping:&lt;br&gt;Components of coastal sensitivity mapping 1:&lt;br&gt;  - Personnel and resources required&lt;br&gt;  - Presentation of GIS systems as a valuable tool for the regional coastal sensitivity mapping</td>
</tr>
<tr>
<td>09.30</td>
<td><strong>Presentation of the implementation of coastal sensitivity mapping project and Action Plan</strong>&lt;br&gt;Components of coastal sensitivity mapping 2:&lt;br&gt;  - Data collection and analysis for the Sensitivity mapping&lt;br&gt;  - Diffusion of coastal sensitivity maps (paper atlas, Web-based GIS mapping)&lt;br&gt;This discussion will be illustrated by concrete examples for each thematic of sensitivity maps including the steps of realization and the relation with GIS tools</td>
</tr>
<tr>
<td>10.30</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11.00</td>
<td><strong>UNEP-WCMC sensitive habitat data along the coast from Nigeria to Angola</strong></td>
</tr>
<tr>
<td>11.30</td>
<td><strong>Individual work session</strong>&lt;br&gt;Presentation of the detailed questionnaire for the assessment of data and of capabilities for coastal sensitivity mapping.</td>
</tr>
<tr>
<td>12.30</td>
<td>Lunch break</td>
</tr>
<tr>
<td>13.30</td>
<td><strong>Individual work session continued</strong></td>
</tr>
<tr>
<td>15.30</td>
<td>Coffee break</td>
</tr>
<tr>
<td>16.00</td>
<td><strong>Recommendations for Sensitivity mapping</strong>&lt;br&gt;Presentation of the key points to initiate mapping project and the need for regional harmonization&lt;br&gt;Presentation of the draft of regional guidelines</td>
</tr>
<tr>
<td>16.30</td>
<td><strong>GI WACAF input for sensitivity mapping project</strong></td>
</tr>
<tr>
<td>16.45</td>
<td><strong>Presentation of certificates</strong>&lt;br&gt;Closure of Training Course</td>
</tr>
<tr>
<td>17.00</td>
<td>End of day</td>
</tr>
</tbody>
</table>
7.4 SUMMARY OF PRESENTATIONS AND DISCUSSIONS

7.4.1 From Friday 20 to Sunday 22 April

All experts were accommodated at the Airside hotel, located at a 5 minutes walking distance from the premises of the IGCC

- Arrival of J.-Y. Huet on Friday 20 in the evening,
- Arrival of L. Page-Jones, C. Carrié, Ph. De Susanne et M. Thiam on Saturday 21 April in the evening.

Sunday 22 April

- 9h30 to 11h00: preparation meeting - Ph. De Susanne, J.-Y. Huet, L. Page-Jones et C. Carrié (finalization of workshop program, practical organization of the workshop sessions and review of questionnaires)
- 11h30 to 14h00: visit of the room used for the workshop at IGCC - M. Thiam, Ph. De Susanne, J.-Y. Huet, L. Page-Jones et C. Carrié (preparation of the room, setting up and test of audio visual equipment for simultaneous projection of English and French presentations, reception of the folders containing supporting documentation for the workshop, printing of the final version of the program)
- 14h00 to 18h00: finalization of the presentations

7.4.2 Monday 23 April

8h30 - 9h00: arrival and registering of participants.

9h30 - 10h30: the opening ceremony took place within the time allocated in the program:

- Georgina Tackie (Mrs), Marine Consultants, who used to be the regional coordinator for IMO in Abidjan, presided the opening ceremony.
- Dr. Chika Ukwe welcomed all the participants and reminded the assistance of UNIDO to IGCC.
- Prof. Chidi Ibe, Regional Director GCLME / Executive Secretariat of IGCC welcomed all participants to the premises of IGCC.
- Hon. Sophia Horner-Sam, Vice-minister, from the Ministry of Ports and Railways, reminded the importance of the cooperation in matters related to oil spill preparedness and response at regional level,
- M. Thiam (of the IMO) welcomed all participants, in the name if the general secretary of the IMO and reminded the importance of coastal oil spill sensitivity mapping. He then presented the activities of the week following the present workshop (workshop for the discussion of the draft sub-regional oil spill contingency plan).
  ➔ See opening speech of the representative of the IMO in appendix 2.

The ceremony was complemented by a group photograph of all participants.
Working sessions were then chaired by Mr. Nnodimele Ethelbert, General Manager, Imo State Environmental Protection Agency (ISEPA), GCLME Regional Centre for Environmental Pollution Monitoring and Assessment.

11h30 - 12h00: Ph de Susanne presented the outlines of the « Global Initiative fro West and Central Africa » (GI WACAF)

12h00 - 12h30: J-Y Huet introduced the principle of sensitivity mapping and highlighted their interest for oil spill preparedness and response. The presentation was based on a real case of an incident which occurred in Brazil in 2005.

12h30 - 13h00: L. Page-Jones presented the various types of coastline, their vulnerability to the effects of oil spill and the Environmental Sensitivity Index (ESI), used to classify the types of shoreline according to their sensitivity.

14h45 - 15h15: C. Carrié presented various sensitive biological and socio-economic resources which can be found on the shoreline, the need to take them into account, and ways of mapping them.

15h15 - 15h45: L. Page-Jones presented the interest of a method for identifying the most sensitive areas on the shoreline, and of a summarized mapping for decision makers.

15h45 - 16h15: J-Y Huet presented examples of tactical maps, designed for use by personnel in charge of filed operations, and operational maps designed for use by oil response operators, who will be deploying the equipment and resources.

16h45: Ph de Susanne presented a regional view of the development of contingency plans in the West and Central Africa region.

The presentations triggered interest from the delegates and, in particular, their questions were related to the following topics:

- Data to be collected for the development of the maps and the degree of detail needed
- The organization of the data in order to produce maps
- The prioritization of data within a theme (type of shoreline, biological resources, etc.)
- The prioritization of themes (between type of shorelines, biological resources, socio-economic resources),
- Methods for the definition of the most sensitive areas,
- The cooperation between government and industry for the development of maps (is the industry willing to make available the data needed for the development of the maps at national level?)

M. Thiam insisted on the necessity that the inventory of available data, expertise and resources is done in close cooperation between government and industry, before the development of a national coastal sensitivity mapping atlas is initiated, in order to avoid duplication of efforts in the collection of data, mapping works and field visits. He also outlined the interest in developing cooperation between government and industry for the development of the maps, and more generally for contingency planning in the region.

16h50 - 18h10: several delegates presented sensitivity mapping projects:
7.4.3 Tuesday 24 April

9h00 - 10h30: L. Page-Jones presented the various types of sensitivity maps, depending on their intended use, as well as the general method for the development of sensitivity maps.

11h00 - 11h30: C. Carrié presented the Geographical Information Systems—GIS, and their advantages for the development of maps. The presentation was based on a real-time demonstration of the creation of sensitivity maps for Northern Angola, using ArcView software (installed on laptop computers).

11h30 - 12h00: C. Carrié presented the various ways of publishing sensitivity maps (as paper atlas, as electronic documents (PDF format) or as integrated in interactive mapping Internet web sites).

A number of questions were asked, in particular on the following aspects:

- The possible assistance to governments of IMO and IPIECA for the development of sensitivity atlases and the role that IMO—UNIDO—IPIECA can play in West and Central Africa for the promotion and assistance for the development of sensitivity maps (financial, assistance? Technical assistance?).
  Mr Thiam, representing IMO, answers that each country should send their requests for assistance to the Secretary-General of IMO, with copy to the Secretary-General of IPIECA. Each request will be taken into account and studied on a case by case basis.
  Ph. De Suzanne, representing IPIECA, adds that IPIECA is ready to support oil spill sensitivity mapping initiatives in the countries and reminds the delegates of the possibility for bilateral cooperation.

- The cost for the acquisition of data (in particular satellite imagery such as IKONOS or QUICKBIRD), when aerial helicopter surveys of the shoreline might be the preferred route and could be organized jointly with the oil industry. It was also noted that the industry often has satellite imagery.

12h00 - 12h30: Ph de Susanne presented two questionnaires for the delegates to fill in:
• «Level of the development of sensitivity maps in West and Central Africa – Gap Analysis. »
• «Action Plan for the development of Oil Spill Sensitivity mapping. »

14h00 - 15h30: Filling of questionnaires by the delegates.

15h30 - 16h30: Round table by delegates and discussion on the feedback for the two days.

• Possibility to set up a regional GIS for West and Central Africa which could be maintained by the GIS regional centre located in Lagos
• The delegates insist on the need for a standardized GIS between countries and if possible with the oil industry.
• The representative of UNIDO mentions the existence of mapping projects being currently implemented at GCLME level and that further contacts have been made with the U.S. Army Corps of Engineers for the set up of a crisis management system.

17h00 - 17h30: Proposal of initial recommendations for sensitivity mapping and the harmonization at regional level.

Note. These recommendations are included in the Regional Guidelines document which will be sent to delegates in the coming weeks.

7.4.4 Friday 27 April

The workshop for the development and standardization of coastal oil spill sensitivity maps in West and Central Africa was officially closed on Friday 27 April at the same time as the workshop of the technical group for the development of sub regional oil spill contingency plans and sub regional cooperation agreements in case of major marine pollution (from 25 to 27 April). The closing ceremony took place in the presence of:

• Dr. Chika Ukwe of UNIDO at IGCC.
• M. Thiam of IMO
• Prof. Chidi Ibe, Regional Director GCLME / Executive Secretary IGCC
• P. Azuma, Director General of Maritime Authority of Ghana
• Mrs. Solange Loubamono, representing the Prime Minister of the Republic of Gabon.
7.5 OUTCOME OF THE QUESTIONNAIRES

This section presents a summary of the outcomes of the two questionnaires:

- «Level of the development of sensitivity maps in West and Central Africa – Gap Analysis. »
- «Action Plan for the development of Oil Spill Sensitivity mapping. »

General summary per country

Angola

- The Ministry of Petroleum (MinPet) is the national authority responsible for contingency planning. Unfortunately the delegation from Angola who attended the present workshop did not include any representative from the ministry of Petroleum. It was therefore indicated that the answers to the questionnaires would have to be sent to MinPet for review and finalization.
- The National Oil spill Contingency Plan was finalized in 2000. To this day its approval by the national assembly is still pending.
- The OPRC 90 convention is in the process of being ratified. However, Angola has implemented national legislation and regulations for oil spill contingency planning.
- The delegation from Angola at the present workshop reported the existence of a project for the development of operational oil spill sensitivity maps as well as a GIS on the coastal sensitivities.
- The delegation also reported the existence of organizations with expertise for the development of maps, of personnel trained to the use of GIS and of available data (at the National Geodesic Institute, at the Ministry of National Research, at the “Agostino Neto” university and in oil companies).

Benin

- The authority responsible for oil spill contingency planning has not yet been designated.
- The OPRC 90 and Fund 92 conventions are in the process of being ratified et Benin has implemented a national legislation for oil spill contingency planning.
- The national organizations likely to be involved in the response to oil spills organized themselves by forming a working group and would like to receive training.
- The geographical institute has expertise for the technical development of the sensitivity maps. Data and resources for implementation are available and the personnel is trained. A request for assistance is however envisaged concerning the methodology.

Cameroon

- The « Comité de Pilotage et de Suivi du Pipeline » was not represented in the workshop. It was therefore not possible to confirm that this organization was officially designated as national competent authority.
• OPRC 90 is in the process of being ratified and Cameroon has implemented a national legislation for oil spill contingency planning.

• The national authorities are involved in oil spill response and preparedness. However, they are not organised into a working committee to develop the national oil spill contingency plan.

• Sensitivity maps were developed and sensitive areas identified in the « Plan de Lutte contre les Déversements Accidentels d’Hydrocarbure (PLDAH). This plan was developed within the framework of the Chad-Cameroon pipeline project by the « Comité de Pilotage et de Suivi de Pipeline (CPSP) ». This plan has not yet been approved officially. The representatives of the local oil industry have also developed sensitivity maps, based on the use of a GIS.

• Expertise, data and GIS trained personnel (both in the public and private sectors – e.g. local oil industry) are available in the country for the development of maps.

Republic of Congo

• It was reported that the national competent authority for oil spill contingency planning has not yet been officially designated. The “marine marchande” has been playing an active role for several years in oil spill preparedness. Following a national workshop in August 2006, a national action plan was developed. This action plan is currently being implemented. The national authority is in charge of the development of sensitivity maps and want to:
  o Setup and supervise a project committee,
  o Use a contractor to finalize the maps

• OPRC 90 was ratified and the country has implemented a national legislation for oil spill preparedness and response.

• The commitment of the national authorities for the development of the national oil spill contingency plan could be increased.

• Expertise for the development of the maps exists in the country, but data are only partially available and personnel are not trained to the use of GIS.

Democratic Republic of Congo

• An Inter-ministerial Commission (Ministry of Environment, Ministry of Transport, Ministry of Petroleum, Ministry of Industry, Ministry of Finance,...) was recently created to develop an implementation plan for the contingency plan.

• OPRC 90 has not yet been ratified and ensuing national legislation has not been developed as yet.

• Sensitivity maps have been developed to manage the risk due to global climate change and these maps can serve as a basis for the development of environmental sensitivity maps.

• Organizations with relevant expertise for the development of the maps exist in country (universities, study centre in Kinshasa), data are partially available and some personnel are trained to the use of GIS. Partnerships should be considered for the development of the maps.
Ivory Coast

- The Ministry of Environment (Ministère de l’Environnement et des Eaux et Forêts) is officially designated as the national authority in charge of contingency planning and would be responsible for the coastal oil spill sensitivity mapping project. A national oil spill preparedness and response centre has been set up as an operational structure within the Ministry of Environment. The national legislation for the implementation of the plan is pending official signature.

- OPRC 90 has been ratified. The Fund 92 still has to be ratified. The national legislation for oil spill contingency planning is in place.

- Maps about the general sensitivity of the shoreline have been developed and could be used as the basis for oil spill sensitivity maps.

- Some organizations have the expertise for the development of the sensitivity maps, data are partially available and personnel are trained to the use of GIS. Needs for assistance were expressed in respect of two aspects: raising the awareness of authorities to the necessity of development of the maps and technical orientation for the development of the maps through national workshops.

Equatorial Guinea

- The Ministry of Environment and Fisheries has taken the leadership in the field of oil spill response but is not yet officially designated. The Ministry works in partnership with the Ministry of Transport, the Ministry of Petroleum, the National Defense, the oil companies and the NGOs. A need for raising awareness of the national authorities was expressed and a national seminar is planned in that respect.

- OPRC 90 has not been ratified.

- The country has available documentation for the identification of sensitive areas. These documents can be used as the basis for the development of the sensitivity maps.

- There is expertise available in country (Ministries, universities, national institute for protected areas) and data are partially available for use by the Ministry of Environment and Fisheries.

Gabon

- The national authority in charge of contingency planning is officially designated. This allowed the development of a national oil spill contingency plan, which is currently pending validation. The development of the plan was done by a working group comprising of the Ministries of Environment, Petroleum, Transport, the national oil spill response centre and the government department in charge of the Merchant Navy (Marine Marchande).

- OPRC 90 and the MARPOL convention have been ratified.

- Coastal oil spill sensitivity maps are being developed:
  - A project committee for the development of the maps is in place and is responsible for defining an action plan for their completion;
  - Sensitivity maps exist for the areas of operation of the oil companies.
• Organizations with the relevant expertise exist in country, data are partially available and the personnel are trained for the use of GIS. Partnerships are possible with various national organizations (Department of Geography of the university, Mapping Institute (Institut de Cartographie), Tropical Research Institute, National Centre for Oceanographic Research)

Ghana

• The Environment Protection Agency is the national competent authority and is officially designated as such. It has developed partnerships with fifteen organizations for the development of the oil spill contingency plan and has benefited of the technical support of IMO, UNIDO and IPIECA.

• OPRC 90 is in the process of being ratified and national legislation is pending validation.

• Sensitivity maps have been developed. An action plan is foreseen to:
  o Update the maps (inclusion of tourist activities and of coastal areas submitted to erosion);
  o Develop operational maps for specific sensitive areas
  o Assess identified sensitive areas in more detail.

• Expertise exists in country for the development of sensitivity maps, data are available and personnel are trained to the use of GIS.

Guinea-Bissau

• No national competent authority has been so far designated. The Ministry of Natural resources and environment has been active in the field of oil spill contingency planning.

• No national oil spill contingency plan has been developed and no conventions have been ratified. However, authorities are aware of the issue, especially in relation to the development of exploration activities.

• Coastal oil spill sensitivity maps have not been developed but resources exist (existing maps, data available, organizations with expertise, personnel trained to the use of GIS and possible partnerships with IUCN).

Republic of Guinea

• It was reported that the Ministry of Environment would be responsible of the development of coastal oil spill sensitivity maps in cooperation with the Ministry in charge of the Merchant Navy (Marine Marchande), who is in charge of the national oil spill contingency plan. An inter-ministerial group in charge of the maps must be set up in order to ensure perfect sharing of the efforts.

• OPRC 90 is ratified and a national legislation is being developed.

• Resources are available in country: National Geographic Institute, National Research Centre who have already developed some sensitivity maps.
Liberia

- The Environment Protection Agency is the national competent authority for the development of sensitivity maps and is officially designated. The agency works in partnership with various organizations with the framework of a committee.
- OPRC 90 is ratified and a national legislation is being developed.
- Sensitivity maps are not yet developed
- Organizations with relevant expertise for the development of coastal sensitivity maps exist. Some data are available and personnel are trained to the use of GIS (UNEP Office, United Mission, Environment Protection Agency - EPA).

Nigeria

- NOSDRA is the national competent authority and is officially designated as such. Partners involved in the response to oil spills have started to get organized within a committee: Ministries of Environment, Department of Petroleum, Ministries of State, Emergency Response Department, oil companies and Maritime Authorities.
- The national plan has been developed, and following the national workshop of December 2006, it was updated.
- The ratification of international conventions is planned (OPRC 90 in the process) and a national oil spill preparedness and response legislation is in place.
- Sensitivity maps are being developed. Following the December 2006 national workshop, an official request for technical assistance was issued by NOSDRA to IMO and IPIECA with the objective to train the national expert for the development of sensitivity maps and the decision makers to the use of these maps for oil spill preparedness and response. The workshop can be organized in 2007, as soon as the national authorities have confirmed the dates.
- Logistical resources (GIS, Data) are available in country as well as organizations with relevant expertise for the development of the sensitivity maps. In particular the regional centre for the GCLME project.

Sao Tomé e Principe

- Activities of oil exploration and production are currently being developed in the country, which calls for the implementation of a national oil spill contingency plan.
- No national competent authority has been identified so far, and conventions are not ratified.
- Sensitivity maps are not developed but data exist and they are available for the development of the maps.
- The country requires assistance for the ratification of the conventions and the training of personnel for the development of coastal oil spill sensitivity maps
Sierra Leone

- Maritime Affairs are in charge of the national oil spill contingency plan, but have not been officially designated. A first version of the plan was drafted in 2004, and IMO provided assistance for the revision of the plan through a national workshop in December 2006. The objective is now to set up a working group.
- OPRC 90 is being ratified and a national oil spill preparedness and response legislation is being developed.
- Oil spill sensitivity maps have not been developed. However, maps were developed for Integrated Coastal Zone management purposes by the university, which includes the identification of areas sensitive to coastal erosion.
- The country has organizations with relevant expertise for the development of sensitivity maps (Department of Mapping at the University)

Republic of Togo

- The Ministry of Environment has recently taken the leadership in the field of oil spill preparedness, cooperation, and response, but has not been officially designated. The Ministry of Environment is organizing a national workshop in July 2007 in order to meet with all parties which might be involved.
- An action plan for the development of the national oil spill contingency plan, including the development of sensitivity maps will be defined.
- The country has organizations with relevant expertise for the development of sensitivity maps, data are available and personnel are trained to the use of GIS. Partnerships are possible and need to be reinforced.

Detailed results of the questionnaires per country

➤ Refer to the tables in following pages.
### Countries

<table>
<thead>
<tr>
<th>Authority in charge of contingency planning</th>
<th>Legislation in place regarding contingency planning</th>
<th>Existing national legislation</th>
<th>Other national legislation</th>
<th>OPRC 90 has been ratified</th>
<th>Existing environmental sensitivity maps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>In process</td>
</tr>
<tr>
<td>Benin</td>
<td>NO</td>
<td>NO</td>
<td>In process</td>
<td>Maps developed</td>
<td>In process</td>
</tr>
<tr>
<td>Cameroon</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>In process</td>
</tr>
<tr>
<td>Congo</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>In process</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>In process</td>
</tr>
<tr>
<td>Gabon</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>In process</td>
</tr>
<tr>
<td>Ghana</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>In process</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
<tr>
<td>Republic of Guinea</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
<tr>
<td>Liberia</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
<tr>
<td>Nigeria</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
<tr>
<td>Democratic Republic of the Congo</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
<tr>
<td>Sao Tome and Principe</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
<tr>
<td>Togo</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>Maps not developed</td>
</tr>
</tbody>
</table>

### Existing national authority?

- Yes
- No

### Legislation in place regarding contingency planning

- In place
- In process
- Maps not developed
- Maps developed

### Other national legislation

- In place (N. 651 - Ministry of Petroleum)
- In place (Environmental framework law, 1996)
- In place (decree for Oil Spill Preparedness and Response)
- In place (decree for Oil Spill Preparedness and Response)
<table>
<thead>
<tr>
<th>Countries</th>
<th>Competent organisation to develop sensitivity maps</th>
<th>Personnel trained in GIS development</th>
<th>Number of people trained in GIS</th>
<th>Type of GIS software used</th>
<th>Partnership possibilities</th>
<th>Availability of geographic data in the country</th>
<th>Existing topographic maps</th>
<th>Scale of topographic maps</th>
<th>Is all the shoreline covered?</th>
<th>Aerial photos and satellite images</th>
<th>Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>YES</td>
<td>YES</td>
<td>Arcview</td>
<td>YES</td>
<td>Available</td>
<td>YES</td>
<td>1/250,000</td>
<td>YES</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Benin</td>
<td>YES</td>
<td>NO</td>
<td>Don’t know</td>
<td>Available</td>
<td>YES</td>
<td>Available</td>
<td></td>
<td>YES</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Cameroon</td>
<td>Don’t know</td>
<td>Yes (TOTAL E&amp;P personnel)</td>
<td>Arcview</td>
<td>Available</td>
<td>No salit pas</td>
<td>Yes</td>
<td>Various scales</td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Congo</td>
<td>YES</td>
<td>NO</td>
<td>Partially available</td>
<td>Available</td>
<td>Yes</td>
<td>Available</td>
<td></td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>YES</td>
<td>YES</td>
<td>Arcview / Mapinfo</td>
<td>Partially available</td>
<td>Available</td>
<td>Various scales</td>
<td>AVAILABLE</td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Gabon</td>
<td>YES</td>
<td>YES</td>
<td>Arcview / Mapinfo / other (not specified)</td>
<td>Partially available</td>
<td>YES</td>
<td>Available</td>
<td></td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>YES</td>
<td>YES</td>
<td>30 (in various organizations)</td>
<td>Arcview 8.3</td>
<td>Available</td>
<td>YES</td>
<td>1/50,000</td>
<td>YES</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>YES</td>
<td>YES</td>
<td>Arcview / Mapinfo / other (not specified)</td>
<td>Partially available</td>
<td>YES</td>
<td>Available</td>
<td></td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Republic of Guinea</td>
<td>Don’t know</td>
<td>NO</td>
<td>Available</td>
<td>YES</td>
<td>Not available</td>
<td>NO</td>
<td></td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>YES</td>
<td>NO</td>
<td>Available</td>
<td>YES</td>
<td>Partially available</td>
<td>YES</td>
<td></td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Liberia</td>
<td>Might be</td>
<td>YES</td>
<td>6</td>
<td>Arcview / other (not specified)</td>
<td>Partially available</td>
<td>YES</td>
<td>- 1/25.000</td>
<td>Available</td>
<td>Available</td>
<td>QuickBird &amp; Landsat</td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>YES</td>
<td>YES</td>
<td>more than 40</td>
<td>Arcview</td>
<td>Partially available</td>
<td>YES</td>
<td>- 1/50,000</td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Democratic Republic of Congo</td>
<td>YES</td>
<td>YES</td>
<td>1 (Expert BABOLONGO of CICG/RDC)</td>
<td>Partially available</td>
<td>YES</td>
<td>YES</td>
<td>1/100,000</td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Sao Tome</td>
<td>Don’t know</td>
<td>NO</td>
<td>Available</td>
<td>YES</td>
<td>Not available</td>
<td>No</td>
<td></td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>Might be</td>
<td>NO</td>
<td>Available</td>
<td>YES</td>
<td>NO</td>
<td>No</td>
<td></td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Togo</td>
<td>YES</td>
<td>YES</td>
<td>Capacity to be reinforced</td>
<td>Arcview / Mapinfo</td>
<td>Partially available</td>
<td>YES</td>
<td>1/200,000 (to be checked) + Nautical charts</td>
<td>Available</td>
<td>Available</td>
<td>SPOT, Landsat</td>
<td></td>
</tr>
<tr>
<td>Countries</td>
<td>Identification of sensitive sites requiring protection</td>
<td>Commitment and willingness of National Authority</td>
<td>Committees &amp; workgroup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensitive sites identified:</td>
<td>Commitment of commitment</td>
<td>Organisation structured</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type of sensitive sites identified</td>
<td>Level of commitment</td>
<td>into committees or workgroup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Need of further assistance to raise commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angola</td>
<td>YES</td>
<td>In process</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benin</td>
<td>YES</td>
<td>In process</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cameroon</td>
<td>YES</td>
<td>In process</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congo</td>
<td>NO</td>
<td>In process</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gabon</td>
<td>YES</td>
<td>In process</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>YES</td>
<td>In process</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>YES</td>
<td>In process</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>YES</td>
<td>In process</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republique de Guinée</td>
<td>NO</td>
<td>High level</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberia</td>
<td>YES</td>
<td>In process</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>NO</td>
<td>Average level</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Democratic Republic of the Congo</td>
<td>NO</td>
<td>High level</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>NO</td>
<td>High level</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Togo</td>
<td>NO</td>
<td>High level</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Sensitive sites identified**
- **Type of sensitive sites identified**
- **Commitment and willingness of National Authority**
  - High level
  - Average level
  - In process
  - Should be identified
  - Not sufficient support
  - NO
- **Committees & workgroup**
  - NO

Accra, Ghana, 23 - 24 April 2007
7.6 LIST OF ABBREVIATIONS AND ACRONYMS USED IN THE REPORT

- ACEPA : Associação das Companhias de Exploração e Produção de Angola
- AOPC : Association des opérateurs pétroliers du Congo
- CICG : Commission Intérimaire du Courant de Guinée
- CLC 92 : International Convention on Civil Liability for oil pollution damage
- ESI : Indice de Vulnérabilité Environnementale – Environmental Sensitivity Index
- GCLME : Guinea Current Large Marine Ecosystem
- GEM-CG : Grand Écosystème Marin du Courant de Guinée
- GI WACAF : IMO / IPIECA Global Initiative Project for the West and Central Africa region
- IGCC : Interim Guinea Current Commission
- IPIECA : International Petroleum Industry Environment Conservation Association
- ISEPA : Imo State Environmental Protection Agency
- IT : Internet Technologies
- ITOPF : International Tanker Owners Pollution Federation Limited
- IUCN : International Union for the Protection of Nature - World Conservation Union
- NOAA : National Oceanic and Atmospheric Administration
- NTIC : Nouvelles Technologies de l’information et de la communication
- IMO : International Maritime Organization (IMO)
- NGO : Non Governmental Organization (NGO)
- UNIDO : United Nations Industrial Development Organization
- OPTS : Oil Producers Trade Section of the Lagos Chamber of Commerce and Industry (Nigeria)
- UNEP : United Nations Environment Programme
- GIS : Geographical Information System
- UPEGA : Union Pétrolière Gabonaise
7.7  PHOTOS OF THE WORKSHOP

Opening ceremony

Meeting room at the IGCC
7.8 SOURCES AND REFERENCES

References:

- IPIECA, 1996, Volume 1: *Sensitivity Mapping for Oil Spill Response*
- Baker, Spalding, Moore, *Sensitivity mapping worldwide - Harmonization and the needs of different user*, International Oil Spill Conference
- Pavia, Michel, Petersen, Birk-Risheim, *An integrated program - For sensitive environment mapping*, International Oil Spill Conference

Report written by:
L. Page-Jones, Oil spill consultants company OTRA, http://www.antipol.com
38, rue Jim Sévellec, 29300 Brest – France
Tél : +33 6 61 94 95 64 - Fax +33 2 98 15 11 14
Mail : lindsay.page-jones@orange.fr

Reviewed by:
Malamine Thiam - Marine Environment Division - International Maritime Organisation
Philippe de Susanne Coordinator of IMO / IPIECA « Global Initiative for West and Central Africa» (GI WACAF) project