



**National Workshop on Environmental Sensitivity Index (ESI)
Mapping for Nigeria and dispersant use policy**

Abuja, Nigeria, 28-30 October 2008



Executive summary: National Workshop on Environmental Sensitivity Index (ESI) Mapping and dispersant use policy for Nigeria

Date: Abuja, Nigeria, 28-30 October 2008

Type : National

Organised by:

- National Oil Spill Detection and Response Detection Agency (NOSDRA)
- International Maritime Organization (IMO)
- International Petroleum Industry Environmental Conservation Association (IPIECA)

Number of participants: 80

The **principal objectives** of the Workshop were to:

- Review of the final draft ESI document in a manner that is acceptable to all.
- Enrich the development of the ESI maps in a format suitable for conducting risk-based assessment of oil spill incidents.
- Be aware of the sensitive and diverse ecosystems and identify the best way to deal with issues of pollution in special areas.
- Discuss the use of dispersants, with a view to developing a national policy

The results of the Workshop are as follows:

Environmental Sensitivity Mapping:

Participants were presented the Environmental Sensitivity Index (ESI) mapping principles, as well as the various types of maps that may be produced for various end-users. The final draft ESI report and maps were reviewed by the participants, who provided comments and recommendations for the finalisation of ESI maps and the format for production and dissemination of maps.

Dispersant Use:

Technical presentations on the use of dispersants were presented to the participants, including an approval procedure for the development of a national dispersant use policy. Guidelines were provided in this respect. This enabled discussion on the actual status related to this issue in Nigeria and identification of further actions required to develop this policy.

Key words: coastal sensitivity mapping, dispersant use, 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 National Oil Spill Detection and Response Agency (NOSDRA) Mr Abe
- For IMO: Mrs Patricia Charlebois, Marine Environnement Division
- For the GI WACAF Project: Mr. Philippe DE SUSANNE and L. Page-Jones, IPIECA



Table of contents

1	Introduction	4
2	Objectives of the workshop	4
3	Programme of the workshop.....	4
4	Location, Dates, Roles and Participants.....	4
5	Summary of Discussions and Presentations delivered	5
5.1	Technical Papers.....	5
5.2	Working Groups	5
6	Recommendations of the Workshop	6
6.1	Observations	6
6.2	Recommendations	6
7	Conclusion	7
8	Appendices	8
8.1	List of participants	8
8.2	Opening Ceremony	12
	Welcome address by the Director General/Chief Executive of the National Oil Spill and Response Agency, Dr. B. A. Ajakaiye	12
	Welcoming address by Mrs Patricia Charlebois, Head of Pollution Response , Intgerational Maritime Organisation (IMO)	13
	Keynote address by the Honourable Minister of Environment, Housing and Urban Development, Arc. Halima Tayo Alao.....	15
8.3	Programme of the workshop	17
8.4	Summary of presentations and discussions	21
8.5	Outcome of the working groups	24
8.6	List of abreviations and acronyms used in the report	28
8.7	Photos of the workshop.....	29



1 INTRODUCTION

The National Oil Spill Detection and Response Agency (NOSDRA), in collaboration with International Maritime Organisation (IMO), International Petroleum Industry Environmental Conservation Association (IPIECA) and Global Initiative for West and Central Africa (GI WACAF) organized a three-day workshop on Environmental Sensitivity Index (ESI) mapping for Nigeria from Tuesday 28th to Thursday 30th October 2008 at Kano Hall, Transcorp Hilton, Abuja.

The workshop was declared open by the then Honourable Minister of Environment, Housing and Urban Development, Arc (Mrs) Halima Tayo Alao, who recalled that one of the major recommendations made at the end of the National Oil Spill Contingency Plan (NOSCP) workshop in December 2006 was the inclusion of ESI maps into the National Oil Spill Contingency Plan (NOSCP) document, as a strategic requirement for effective oil spill management in Nigeria. She, therefore, emphasized the need to critically review the report of the ESI mapping project for global acceptability and applicability in order to assist government to take appropriate decisions that would enhance the livelihood of all Nigerians.

2 OBJECTIVES OF THE WORKSHOP

The aim of the workshop was to create the enabling environment where stakeholders would contribute meaningfully towards the realization of the following specific objectives:

- Review of the final draft ESI document in a manner that is acceptable to all.
- Enrich the development of the ESI map in a manner suitable for conducting risk-based assessment of oil spill incidents.
- Be aware of the sensitive and diverse ecosystems and identify the best way to deal with issues of pollution in special areas.
- Discuss the use of dispersants, with a view to developing a national policy

3 PROGRAMME OF THE WORKSHOP

The workshop lasted three days, with the two first days focused on the ESI Mapping for Nigeria. Technical presentations and working groups were organised to review the Draft ESI Mapping report and maps. The third day was dedicated to technical presentations and delegate discussions on the use of dispersants.

→ See the programme of the workshop in Appendix 8.3.

4 LOCATION, DATES, ROLES AND PARTICIPANTS

The National Oil Spill Detection and Response Agency (NOSDRA) took charge of the organization of the workshop as well as all associated logistics during the three days (coffee breaks, lunches, equipment for audiovisuals, printers and photocopiers).



Experts from IMO and IPIECA coordinated the workshop. They were Ms Patricia Charlebois from IMO and Mr. Philippe de Susanne, Dr. Lindsay Page-Jones, Mr. Dave Salt and Emma Hughes for IPIECA.

A total of 95 participants attended the workshop, representing a cross-section of stakeholders comprised of government organisations and the oil industry involved in the National Oil Spill Contingency Plan.

→ See list of participants in Appendix 8.1

5 SUMMARY OF DISCUSSIONS AND PRESENTATIONS DELIVERED

5.1 TECHNICAL PAPERS

Technical papers were presented by the resource persons on the following topics:

- i. the International Convention on Oil Pollution Preparedness Response and Cooperation, 1990 (OPRC 90);
- ii. the GI WACAF project, including the status of oil spill sensitivity mapping in the region, and examples of sensitivity mapping development;
- iii. introduction to coastal sensitivity mapping;
- iv. the existing initiative on oil spill sensitivity mapping of the Department of Petroleum Resources (DPR); and an update on Nigerian Maritime Administration and Safety Agency (NIMASA) activities;
- v. the development of specific maps for decision-makers (strategic maps), on-scene commanders (including logistics and operational information) and on-site responders (for the most sensitive sites and specific/ at risk sites);
- vi. the draft report on Environmental Sensitivity Index (ESI) mapping for Nigeria;
- vii. the production of maps using GIS software and the development of a coastal oil spill sensitivity atlas;
- viii. oil spill coastal sensitivity mapping and its integration into the national oil spill preparedness effort (including dispersant spraying areas, ports of refuge, and map-related issues);
- ix. the general action plan for the development of sensitivity maps and for their integration into the national and West and Central Africa regional Preparedness and Response System;
- x. technical presentation and discussion on the dispersant use policy.

5.2 WORKING GROUPS

Four working groups were organised to review the Draft ESI Mapping Report on the afternoon of the 29th of October. The results of the workshop are summarised in the appendix 7.4.

→ See Outcomes of the Working Group, Appendix 8.5.

6 RECOMMENDATIONS OF THE WORKSHOP

6.1 OBSERVATIONS

1. The delegates recognised the excellent mapping work carried out, which constitutes a comprehensive geographic data set for oil spill sensitivity index mapping. Delegates also agreed that the mapping methodology used complied with international standards and was appropriate for the Nigerian coastal and inland environment.
2. The delegates recognised NOSDRA as the agency in charge of supervising the development and update of the Nigerian ESI maps and incorporation into the National Oil Spill Contingency Plan.

6.2 RECOMMENDATIONS

The delegates recommend:

1. that the oil spill environmental sensitivity atlas should be simple, focused and operational.
2. the establishment of a technical working group, composed of key stakeholders and end-users of the maps (including representatives of the public and private sectors) to review and advice for the finalisation of the ESI final draft report.
3. the strengthening of the partnerships amongst national, state and local agencies as well as the industry.
4. the use of ESI maps to raise the awareness of local communities regarding the health and environmental impacts of the oil spills.
5. the need for building GIS mapping capacity for NOSDRA and all stakeholders.
6. that the final ESI maps should be in conformity with the OPTS-DPR ESI standard and protocol.
7. that NOSDRA should assess and collect data and maps from other relevant sources.
8. that geographic information is shared and partnerships are developed to avoid duplication of efforts.
9. that NOSDRA is in charge of the production and the dissemination of hard and soft copies of the national ESI base line maps, under the umbrella of the NOSCP, in a format suited to the dedicated end users. A dissemination policy should be developed and agreed by the Technical working group.
10. that the GIS information is produced in a format compatible with other GIS projects.
11. that Internet Web Map Server technology is used to disseminate digital versions of the ESI maps, in addition to the hard copies.
12. that a copy of the final draft ESI report is provided to all relevant stakeholders.



13. the validation of the accuracy of data by relevant stakeholders, for quality assurance and control.
14. that NOSDRA should liaise with the national mapping agencies such as the Office of Surveyor General of the Federation for the Land, Hydrographer of the Navy for waters for effective integration of the ESI maps.
15. that for all regular updates and for any significant changes of the maps, the relevant stakeholders should be notified.
16. the existing standards and guidelines for dispersant use should be updated in collaboration with relevant government agencies with a view to developing a National Dispersant Use Policy.

7 CONCLUSION

The event benefited from the participation of representatives from National Authorities and from representatives of the oil industry. This was one of the keys to the success of this event, as it provided a platform for interesting exchanges of views between representatives of governments and private industry.

The event reminded participants of the need to develop operational ESI maps and to implement a national dispersant use policy.

The ESI maps are an essential tool for oil spill preparedness and oil spill response operations (for decision-makers, and response operations on site). The workshop allowed the participants to review the ESI final draft report and draw attention to the level of development of ESI maps for Nigeria.

A dispersant use policy is an essential part of the NOSCP, as it provides the legal framework for the use of dispersants for national authorities and for the oil industry.

The workshop also demonstrated the common interest of national authorities and of the industry for the development of operational ESI maps and for establishing a dispersant use policy; as well as highlighting the need to develop partnerships between the relevant national agencies and the oil industry to finalise and implement the ESI maps and dispersant use policy.



8 APPENDICES

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8.2 OPENING CEREMONY

Welcome address by the Director General/Chief Executive of the National Oil Spill and Response Agency, Dr. B. A. Ajakaiye

It is my pleasure and honour to welcome you all to this workshop on Finalization of the Environmental Sensitivity Index (ESI) Maps for Nigeria.

You may recall that during the review of the National Oil Spill Contingency Plan, (NOSCP) in December 2006, Stakeholders recommended that it is of necessity to include in the appendix the Environmental Sensitivity Index Maps of Nigeria in particular the Niger Delta area, which is the hub of oil exploration and production in Nigeria. It is in recognition of the fact that Nigeria does not have any comprehensive ESI Map that NOSDRA, commissioned Consultants in 2007 with a scope of preparing a comprehensive and seamless ESI Map for 50kilometers inland from the Nigerian Coastline from Badagry to Calabar. The Consultants have almost completed the assignment and submitted the draft report of the ESI Map.

You may recall that in August this year, NOSDRA convened a meeting of Stakeholders here in Abuja to consider what we expect to achieve at the end of this Workshop. I believe that most of the Stakeholders are present in this Workshop and that all views and suggestions will be captured and incorporated in the final ESI Maps. I wish to acknowledge previous work done by various Oil Companies, Government Agencies and Departments.

The Honourable Minister has demonstrated utmost commitment and zeal to this project by making available some funds within the 2007/2008 budgetary provision to conduct the project. Our gathering here today is a complement of such commitment and we must commend the efforts of the Honourable Minister for this laudable project.

We also wish to acknowledge the very strong support of the Chairman, Senate Committee on Environment and Ecology as well as the Chairman, House Committee on Environment for the Agency not only for this project but for all our activities in the pursuit of achieving our mandate.

It is my pleasure to commend the expert contributions and support of our development partners, namely, International Maritime Organization (IMO), International Petroleum Industry Environment Conservation Association (IPIECA) and Global Initiative for West and Central Africa (GI-WACAF) towards the actualization of our objectives in this project and their willingness to make available to us both human and material resources as at when necessary for the achievement of our overall mandate.

We are certain that this forum will create the enabling environment where stakeholders will contribute meaningfully to enrich the development of the ESI map suitable to conduct risk-based assessment of spill incidents in Nigeria. The draft document requires to be critically reviewed to enable us come with a document acceptable to all stakeholders.

Finally, I thank you all for coming.

DR. B. A. AJAKAIYE

Director General, Chief Executive, National Oil Spill Detection and Response Agency



**Welcoming address by Mrs Patricia Charlebois, Head of Pollution Response ,
International Maritime Organisation (IMO)**

Excellencies, Colleagues, Ladies and Gentlemen

I consider it a great honour to be here this morning to address you on behalf of the Secretary-General of the International Maritime Organization, Mr. Efthimios Mitropoulos.

I welcome you all to this National Workshop which will address both the finalization of environmental sensitivity index (ESI) mapping and which will review of the national dispersant policy for Nigeria.

I wish to express my appreciation to the Government of Nigeria for hosting this national workshop, and in particular the National Oil Spill Detection and Response Organization (NOSDRA) in organizing the workshop and for their efforts to ensure that this Course is a success.

I am pleased to welcome so many representatives from within your Government and from the oil industry to this workshop that will, with such a broad range of expertise present, will undoubtedly ensure a successful outcome.

The co-operation between IMO and the petroleum industry, under the umbrella of the longstanding Global Initiative, that is coordinated through IMO the International Petroleum Industry Environmental Conservation Association (or IPIECA), is a partnership that has matured through more than ten years of close cooperation and from which we have seen many positive results.

I would therefore like to extend my appreciation to IPIECA for their pivotal role in the organization of this workshop.

The Workshop is expected to enhance to the existing oil spill response capacity at the national level. At the same time, it is the hope of IMO and IPIECA, that this Workshop will further the process towards the development of closer co-operation between the various Ministries and stakeholders with responsibilities related to oil spill response in Nigeria, relationships which are instrumental when faced with a major oil spill.

A national contingency plan has been developed for Nigeria, a plan for which everyone present has something to contribute.

However, as you are all aware, it is one thing is to develop a national plan and have it adopted, yet another and much more complicated issue to implement the plan, or could I say “put meat at the bones” and to make it operational.

The plan sets out the administrative and operational frameworks for co-operation and communication at the national and local levels as well as providing a strategy on how to respond to an oil spill. But the plan, as such, does not provide the means for making the right decisions or for the physical response to an oil spill.

This workshop will focus on further development of the operational tools and resources that are needed for the purposes of planning and that will assist in the



decision-making process should you be faced with a major oil spill. It is our hope, that on Thursday, when we wrap up, you will have been provided an overview of the work carried out on the ESI mapping project and will have contributed your comments and expertise to improving this tool and providing the quality assurance feedback needed to finalize the project. You will also have reviewed the national dispersant policy and learned new information that will assist you in making good operational decisions with regard to dispersant use.

I look forward to participating in the Workshop and to having the opportunity for more in-depth discussions with you in the coming days.

Ladies and Gentlemen, once again welcome to this National Workshop on Environmental Sensitivity Index Mapping and review of the national dispersant policy for Nigeria and my best wishes to you for a fruitful outcome.

Thank you

Patricia Charlebois



Keynote address by the Honourable Minister of Environment, Housing and Urban Development, Arc. Halima Tayo Alao

It is a great pleasure for me to address you today on this occasion of the National workshop on the Finalization of Environmental Sensitivity Index (ESI) Maps for Nigeria. This initiative is an important stride in our collective efforts geared towards sustainable management of our environment generally and in particular in the Niger Delta area which constitute the hub of oil exploration in Nigeria.

You may wish to recall that one of the major recommendations made at the end of the National Oil Spill Contingency Plan (NOSCP) workshop in December 2006 was the insertion of ESI Maps into the National Oil Spill Contingency Plan (NOSCP) document as a strategic requirement for effective oil spill management in Nigeria. I am particularly happy that the National Oil Spill Detection and Response Agency (NOSDRA) took cognizance of that recommendation and swung into action to produce the ESI Map of our coastline, stretching from Calabar to Lagos. This gesture will give baseline information on strategies to adopt for the protection of our coastline and inland areas during oil spill incidents.

Environmental Sensitive Index maps give us the opportunity to appreciate the variable contents of our fragile ecosystem and the best way to deal with issues of pollution in special areas. It is my sincere conviction that our deliberations here shall further enrich the report and shed more light on government efforts in protecting identified sensitive areas. Government strongly believes in protecting and safeguarding the lives of her citizens as well as the natural and built environment in which they inhabit in symbiotic partnership with plants and animals. Given the short and long term negative effects of oil spillages on the environments, government as a responsible democratic institution is committed to protecting the land, water and atmospheric resources of Nigeria. This is borne out of a clear understanding that the environment is the very foundation upon which human life and well being depends.

Since the emergence of the current democratic dispensation in Nigeria the environment has been a focus of national attention, this is evident in the establishment of specialized Agencies such as National Oil Spill Detection and Response Agency (NOSDRA) which is the lead Agency in oil spill management matters. The Agency is also designed to focus on environmental issues in the oil and gas sector. NOSDRA is on course and I urge you all to cooperate fully with this all important Agency to achieve its mandate.

Ladies and gentlemen, it may interest you to note that in the first six months of 2008, four hundred and nineteen (419) oil spill incidents were reported to the National Oil Spill Detection and Response Agency (NOSDRA). This portends a great danger to us as a nation and particularly to the environment and the social and economic well being of our people. It is on this note that the ESI initiative is a welcome development as a strategic requirement to tackle precisely the challenges of protecting the sensitive ecosystem of the Niger Delta area. This initiative will be extended to cover other parts of the country in due course.

As part of its strategy to position itself for effective oil spill monitoring and control, National Oil Spill Detection and Response Agency (NOSDRA) as the Agency of my Ministry commenced action on the production of ESI map for Nigeria in 2007. The conduct of the project was timely



and has reached an advanced stage. We are gathered here today to fine tune and review the draft report with a view to enriching the document and finalize it for adoption as the first comprehensive and seamless ESI map covering the entire Nigeria coastline stretching from Badagry to Calabar. This indeed will afford all the stakeholders the opportunity to contribute meaningfully and render the document acceptable to all.

I am aware of the immense contribution of our development partners namely International Maritime Organization (IMO), International Petroleum Industry Environment conservation Association (IPIECA) and Global Initiative for West and Central Africa (GI-WACAF) to this laudable project. They have demonstrated their commitment to enhancing our national capacity to tackle pollution arising from oil spill incidences. I also commend their efforts in partnering with the National Oil Spill Detection and Response Agency (NOSDRA) towards the achievement of its mandate.

Distinguished Ladies and Gentlemen, as you are aware that environmental well being is fundamental to achieving the seven point agenda of the present Administration, I will like to charge this workshop to critically review the report of the ESI mapping project and ensure its global acceptability and applicability such that it will assist government to take appropriate decisions that would enhance the livelihood of the people of Niger Delta area in particular and all Nigerians in general.

On this note, I hereby declare the workshop open.

Thank you for your attention and I wish you fruitful deliberations.

Arc. Halima Tayo Alao

Honourable Minister



8.3 PROGRAMME OF THE WORKSHOP

Day One

Tuesday October 28, 2008

- 09.00 – 10.00 am Registration of participants
- 10.00 – 10.15 am Arrival of Invited Guests
- 10.15 – 11.15 am Opening Ceremony
- National Anthem
 - Opening Prayer
 - Introduction of Dignitaries by Master of Ceremony
 - Welcome Address by Director General (NOSDRA),
Dr. B. A. Ajakaiye
 - Introductory Remarks by International Maritime Organisation (IMO)
Representative, **Mrs Patricia Charlebois**
 - Goodwill Messages
 - Chairman, House Committee on Environment, **Honourable Duro
Faseyi**
 - Chairman, Senate Committee on Environment & Ecology,
Senator Grace Folashade Bent
 - Keynote Address and Inauguration of the Workshop by the
Honourable Minister of Environment, Housing and Urban
Development,
Arc. (Mrs) Halima Tayo Alao
 - Vote of Thanks by Director (PPAR) **Mr. O. J. Abe**
 - National Anthem
 - Group Photograph
- 11.15 – 11.55 am Coffee break
- 11.50 – 11.55 am Introductions
- IMO/IPIECA Consultants
 - Participants



11.55 – 12.20 noon	Presentation of the OPRC Convention and international guidelines for oil spill preparedness and response - Patricia Charlebois (IMO)
12.30 – 12.45 pm	Presentation of the GI WACAF Project, including The status of oil spill sensitivity mapping in the region, and examples of sensitivity mapping development - Philippe de Susanne (IMO/IPIECA)
12.45 – 13.00 pm	Presentation of participants.
13.00 - 2.00 pm	Lunch Break
2.00 – 2.35 pm	Introduction to coastal sensitivity mapping - L Page Jones (IMO/IPIECA)
2.35 – 3.05 pm	Presentation of existing initiative for oil spill sensitivity mapping - DPR
3.05 - 3.20 pm	Presentation of existing initiative for oil spill sensitivity mapping - NIMASA
3.20 – 4.00 pm	Presentation of Draft Report on Environmental Sensitivity Index (ESI) Mapping for Nigeria - NOSDRA
4.00 – 4.40 pm	Which maps for which users? Development of strategic maps (identification of the coastal most sensitive sites) for decision makers - L Page Jones (IMO/IPIECA)
4.40 pm	End of Day One



Day Two

Wednesday October 29, 2008

Technical session on Sensitivity Mapping

- | | |
|---------------------|--|
| 10.00 – 10.30 am | Development of specific maps for On Scene Commanders (including logistics and operational information) and On Site responders (for the most sensitive sites) - L Page Jones (IMO/IPIECA) |
| 10.30 – 11.00 am | Oil spill coastal sensitivity mapping and its integration into the national oil spill preparedness effort (including dispersant spraying areas, ports of refuge, and maps related issues) - L Page Jones (IMO/IPIECA) |
| 11.00 – 11.30 am | Presentation of a general action plan for the development of sensitivity maps and of the GI WACAF “regional Guide for Oil Spill Sensitivity Mapping and its Integration into Preparedness and Response Systems in the West and Central Africa Region” - L Page Jones (IMO/IPIECA) |
| 11.30am - 12.00noon | Syndicate Group Discussion: Review of the ESI Draft Report
L Page Jones (IMO/IPIECA) |
| 12.00 – 1.00 pm | Syndicate Group Discussion: Review of the ESI Draft Report |
| 1.00 – 2.00 pm | Lunch Break |
| 2.00 – 3.00 pm | Syndicate Group Discussion: Review of the ESI Draft Report |
| 3.00 – 4.30 pm | Presentation and Adoption of Syndicate Group Reports |
| 4.30 pm | End of Day Two |



Day Three

Thursday October 30, 2008

Update of the National Dispersant Use Policy

- 09.30 - 10.00 am Dispersant introduction: Overview of response options
Dave Salt (IMO/IPIECA)
- 10.00 -10.30 am Presentation of the existing documents on dispersant use policy -
DPR
- 10.30 – 11.30 am Presentations by **Dave Salt (IMO/IPIECA)**
- Dispersant testing and approval
 - Dispersant use decision making
 - Case studies of dispersant use and the impact of decision making
- 11.30 – 12.00 noon Discussions on Dispersant Use in Nigeria
- 12.00 – 12.30 noon Presentation and Adoption of Communiqué
- 12.30 – 12.45 pm Closing Remarks – Director General (NOSDRA), **Dr. B. A. Ajakaiye**
- 12.45 – 12.55 pm Vote of Thanks by Director (OSDR), **Mr. I. O. Musa**
- 1.00 pm Closing Prayer
- 1.00 pm – 2.00 pm Lunch Break



8.4 SUMMARY OF PRESENTATIONS AND DISCUSSIONS

Tuesday 28th October

P. Charlebois presented the 1990 OPRC Convention and the international guidelines for oil spill preparedness and response.

P. de Susanne presented the GI WACAF Project, including the status of oil spill sensitivity mapping in the region, and examples of sensitivity mapping development.

L. Page-Jones introduced the principle of accidental pollution sensitivity mapping and highlighted its interest for oil spill preparedness and response, including the various types of coastline, their vulnerability to the effects of oil spills and the Environmental Sensitivity Index (ESI) used to classify the types of shoreline according to their sensitivity and the various sensitive biological and socio-economic resources which can be found on the shoreline. He underscored the importance of these ecosystem components and identified ways of mapping them.

The representative of DPR presented the OPTS – DPR standards and protocol for ESI mapping in Nigeria, which will be officially published before the end of November.

The representative of NIMASA introduced the NIMASA agency, and its role in oil spill preparedness and response.

A representative of GeoAfrica, the consultants engaged by NOSDRA to undertake the ESI mapping project, presented the ESI Final Draft Report on Environmental Sensitivity Index (ESI) Mapping for Nigeria.

L. Page-Jones then presented information on the development of specific maps for different end-users, depending on their needs for oil spill preparedness and response. The development of strategic maps for decision-makers to locate and rank the most sensitive sites was discussed.

Wednesday 29th October

L. Page-Jones presented examples of tactical maps, designed for use by personnel in charge of organizing field operations, and operational maps designed for use by oil response operators, who would be deploying the equipment and resources on site.

The next presentation focused on the need to integrate the development of ESI operational maps into the development of the National Oil Spill Contingency Plan for oil spill preparedness, and or oil spill response. The interest of ESI maps for other environmental projects was also discussed.

The status of the development of ESI maps for Nigeria was compared to the general action plan for the development and harmonization of ESI maps in Western and Central Africa, developed through the GI WACAF project (refer to “regional Guide for Oil Spill Sensitivity Mapping and its Integration into Preparedness and Response Systems in the West and Central Africa Region”).

The participants were then organised into four discussion groups and asked to review and comment on the ESI final draft report, and issue recommendations for the finalisation of ESI operational maps.

→ Refer to the Appendices for the results of discussions of the 4 discussion groups.

Thursday 30th October

D. Salt introduced the use of dispersants for offshore oil spill response. His presentation covered various topics, including:

- Dispersants: What are they?
- How do they work?
- What are the components?
- What are the critical success factors?
- What are the application techniques?

The representative of DPR presented the existing policy documents related to the use of dispersants in Nigeria.

D. Salt then presented:

- A general procedure for dispersant testing and approval covering:
 - Efficiency;
 - Toxicity; and
 - Approval regimes.
- The Dispersant use decision making process:
 - NEBA considerations;
 - Operational considerations;
 - Importance of time.



- 3 case studies on dispersant use and the impact of decision-making for successful operations.

8.5 OUTCOME OF THE WORKING GROUPS

This section presents a summary of the outcomes of the discussions four working group conducted on the 29th of October 2008.

The delegates acknowledged the quality of the final draft report “Environmental Sensitivity Index mapping of Nigerian coastline” provided by NOSDRA.

All delegates recognised the excellent work carried out, which constitutes a comprehensive data set for oil spill sensitivity mapping. Delegates also agreed that the mapping methodology used complied with international standards and was appropriate for the Nigerian costal and inland environment.

The delegates recommended that the oil spill sensitivity atlas should be:

- Simple, and easily to use by non-specialists in period of crisis;
- Focused on the needs of the different users;
- Operational so that it may be used for oil spill preparedness and response.

Following a full review of the final draft report, the delegates recommend the following:

1. Development of ESI mapping

The delegates recognised NOSDRA as the organisation in charge of supervising the development and update of the Nigerian ESI maps (accordingly to the OPTS-DPR protocol), in liaison with the National Oil Spill Contingency Plan.

The delegates recommended the establishment of a technical working group, composed of key stake holders and end-users of the maps (including representatives of the public and private sectors), to review and advise on the finalisation of the ESI final draft report.

The delegates recommended the strengthening of the partnerships between national agencies, and with the oil industry.

The delegates noted the potential use of ESI maps to raise the awareness of local communities regarding the health and environmental impact of oil spills.

2. Identification of required personnel and resources

The delegates recognised the need for NOSDRA to remain in control of the ESI mapping project, i.e. have a copy of all the GIS layers, with complete attribute tables and relevant metadata (source/ producer/ year accuracy etc.).

The delegates recognised the need for building GIS mapping capacity within NOSDRA.

3. Definition and setup of the structure of the GIS

The delegates recommended that the final ESI maps comply with the OPTS-DPR standard & protocol developed by DPR.

4. Collection and analysis of data

The delegates recommended that NOSDRA serve as the central information resource regarding environmental sensitivity mapping, and, as such, should:

- Assess and collect the additional existing relevant sources of data and maps available in Nigeria from other players (public and private), including previous studies;
- Ensure that all available / future information is taken into account.

The delegates noted the importance of avoiding duplication of work between agencies and the need for additional research on inland economic oil spill impacts.

The delegates noted the interest of developing sub-categories for specific coastal / inland features, and the potential interest of cumulative yet distinct sensitivity indices (to cover various parameters of flora/fauna/habitats/etc.).

5. Development of the baseline maps

The delegates recommended that the choice of information that is included in the baseline maps should be determined based on the needs of the end-users of the specific maps (may be different between decision-makers and on-site responders).

6. Mapping of the sensitivity

The delegates recommended that:

- Sensitive biological resources be classified, so they can be filtered and indigenous resources highlighted.
- Sensitive human-use resources (at risk) be emphasized, i.e. locate the coastal/ inland human settlements and identify all the ports.
- Logistics and operational resources should be completed with operational and environmental information (MetOcean data, main currents, bathymetry, Operational criteria for oil spill response, booming recommendations, etc.). Consider using additional symbols if and when requested.

7. Production of maps

The delegates recognised the need to develop different types/scales of maps suited to the needs of different end users, for example:

- Tactical sensitivity maps for On-Scene Commanders at a relevant scale, e.g. 1/25000 to 1/50000;

- Strategic maps at small scale, identifying the most sensitive sites and protection priority for the decision makers, to be validated by the national authorities,
- Site operational maps at high resolution for on-site responders (for the most sensitive sites and others as requested).

The table below, for the production of these specific maps, is an extract from the guidelines provided by the GI WACAF: “Guide for Oil Spill Sensitivity Mapping and its Integration into Preparedness and Response Systems in the West and Central Africa Region”, downloadable from <http://www.giwacaf.org> .

User	Decision maker	Person in charge of operations on site	Operators on site
Role	Define a general response strategy for the region or country.	Develop tactics to protect and to respond to spill and to manage operations on the field.	Implement the protection and cleanup operations.
Requirements	Localising the most sensitive sites.	Assessing the coastal sensitivity, the areas to protect or “sacrificial” and the usable resources for operations.	Knowing the available resources on site, the deployment plan of specific equipment for the most sensitive sites.
Types of maps required	Strategic map of the most sensitive sites	Tactical sensitivity maps	Operational maps for sensitive sites
Content			
Shoreline type and sensitivity	Simplified	YES	YES
Sensitive biological resources	Simplified	YES	Depending on the sites
Sensitive human-use resources	Simplified	YES	Depending on the sites
Logistics and operational resources	Simplified	YES	YES
Others	Location of the most sensitive sites.	Information on the risks.	Detailed information for the operations on site (e.g. anchoring of booms...)
Scale	Small scale (country, region...)	Intermediate scale (province, region...)	Large scale (only concerns the most sensitive sites)

The delegates recommended that a comprehensive legend be provided for each map be included, consistent with the geographical features of the maps and simplified when possible (e.g. avoid using ESI sub-indexes such as 10a, 10b, 10c, 10d for tactical / onsite response



maps). However, it is recommended that these finder details are retained within the GIS system.

The delegates recommended that the maps (i.e. ESI baseline maps and tactical maps) not contain too much information on them, for purposes clarity and ease of understanding (if required it is recommended that different sets of maps be produced, each set corresponding to a theme).

The delegates recommended the inclusion of general oil spill response cleanup guidelines for different types of shoreline and specific site protection operational guidelines, when required.

8. Production and distribution of an atlas

The delegates recommend that NOSDRA produce and disseminate both hard and electronic copies of the ESI maps, in a format suited to the end users. A dissemination policy should be developed and agreed by the Technical working group.

The delegates recommended that the GIS information is developed in such a way as to ensure compatibility with other GIS projects (e.g. coastal environmental sensitivity, ICZM), so that other national agencies are able to use the finalized ESI maps.

The delegates encourage the use of Internet Web Map Server technology to disseminate the digital version of the ESI maps in addition to the paper copies.

9. Update of the atlas and test during exercises

The delegates proposed that a copy of the final draft ESI report be provided to the oil industry, oil operators and NGOs for review.

The delegates recommended that the sustainability of the ESI maps is ensured by defining an update policy, based on in-house competencies (for GIS management) and exchanges with private and public sector to collect updated information.

The delegates recommended that for all regular updates and for any significant changes to the maps (following changes in coastal resources/ features), the relevant stakeholders are notified.



8.6 LIST OF ABBREVIATIONS AND ACRONYMS USED IN THE REPORT

- CLC 92 : International Convention on Civil Liability for oil pollution damage
- ESI : Environmental Sensitivity Index
- FUND 92 : Convention : International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND 92)
- GI WACAF : Global Initiative Project for the West and Central Africa region
- IPIECA : International Petroleum Industry Environment Conservation Association
- NOAA : National Oceanic and Atmospheric Administration
- IMO : International Maritime Organization (IMO)
- NGO : Non Governmental Organization (NGO)
- OPTS : Oil Producers Trade Section of the Lagos Chamber of Commerce and Industry (Nigeria)
- GIS : Geographical Information System

8.7 PHOTOS OF THE WORKSHOP



Opening Ceremony



Participants



Group discussions