INTERNATIONAL MARITIME ORGANIZATION

GIWACAF

IPIECA

THE GLOBAL OIL AND GAS INDUSTRY ASSOCIATION FOR ENVIRONMENTAL AND SOCIAL ISSUES

REPORT

Sub regional workshop on shoreline response to oil spills

Swakopmund, Namibia

28th – 31st May 2018

Global Initiative for Western, Central and Southern Africa

Organised by:

The Ministry of Works and Transport, Republic of Namibia

UNITY LIBERTY JUSTICE

NOTE

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Executive summary

The sub-regional workshop on shoreline response to oil spills was organised in the Sea Side Hotel and Spa, Swakopmund, from 28th to 31st May 2018. It gathered delegates from different ministries and agencies of 8 member countries of the GI WACAF Project, in addition to Namibia as the host country, namely Angola, Cabo Verde, Ghana, Liberia, Nigeria, The Gambia, Sierra Leone and South Africa.

The event was hosted by the Namibian Ministry of Works and Transport within the framework of the GI WACAF Project, with support from the International Maritime Organization (IMO) and IPIECA, the global oil and gas association for environmental and social issues.

44 participants attended the workshop, and the list of attendees is set out in Annex 3 of this report.

The general objective of the workshop was to provide decision makers with a comprehensive knowledge of shoreline response at operational, tactical and strategic levels. The audience of this workshop was composed of governmental representatives in charge of developing national systems for oil spill preparedness and response in their respective countries. In addition, some of the participants had more operational responsibilities, for example, leading the response and clean-up operations in case an oil spill occurs. Specifically tailored for this audience, the workshop had to cover all these aspects of shoreline response.

The workshop focused on:

1. How to define shoreline clean-up strategies depending on the type of oil spilled, the type of shoreline and available equipment;
2. How to organize shoreline clean-up response detailing the different techniques;
3. How to decide when theshoreline clean-up response should end; and
4. How to take into account shoreline response considerations within a national system for preparedness and response to oil spills.

In order to meet the objectives of the workshop, the participants were guided through 3 days of presentations, case studies and working group sessions. It was complemented with a full day exercise organized into the following phases: Working groups, field assessment and field work exercises.

Discussions and exchanges were encouraged throughout the activity, especially through dedicated sessions of the workshop. Discussions related to the establishment and status of shoreline response strategies at national level, and how to link such strategy with the national system for preparation and response to oil spills. The facilitators seized this opportunity to put forward recommendations on what needs to be taken into consideration during the planning and response phases, as well as discussed possible way to overcome potential barriers.

The main recommendations are summarized below:

- Develop and/or update sensitivity maps of the shoreline to identify the different types of substrate (sandy, rocky, muddy) detailing priorities in terms of cleanup response and specific areas to be protected in case of a pollution incident (environmental and economic resources);
- Following the definition of shoreline clean-up priorities, determine the most appropriate cleanup response techniques with the objective to be both efficient and minimise environmental impact;
- Set up and/or locate equipment stockpiles that could be used in case of an oil spill;
- Include and develop a specific organization in the national oil spill contingency plan detailing key personnel together with specific roles and responsibilities; and
- Develop specific procedures in the annexes of the national oil spill contingency plan to guide on site responders during the clean-up operations. These procedures should provide support to the response team on the following topics: How to assess a contaminated shoreline? How to set up a working site? How to manage health and safety? How to choose between the different cleanup techniques? How to manage waste? How to decide when to end the response?

These recommendations are detailed in chapter 7.

The active participation and expertise of all delegates as well as the support from the Ministry of Works and Transport of Namibia were greatly appreciated and were key to the success of this workshop.

Contents

1. Presentation of the GI WACAF Project

Launched in 2006, the Global Initiative for West, Central and Southern Africa (GI WACAF) Project is a collaboration between the International Maritime Organization (IMO) and IPIECA, the global oil and gas industry association for environmental and social issues, to enhance the capacity of partner countries to prepare for and respond to marine oil spills.

The mission is to strengthen the capability for preparedness and response to an oil spill in 22 West, Central and Southern African Countries in accordance with the provisions set out in the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90).

To achieve its mission, the GI WACAF Project organizes and delivers workshops, seminars and exercises, that aim to communicate good practice in all aspects of spill preparedness and response, drawing on expertise and experience from within governments, industry and other organizations working in this specialized field. The Project's activities are supported and facilitated by its network of dedicated government and industry focal points. Promoting cooperation amongst all relevant government agencies, oil industry business units and stakeholders nationally, regionally and internationally is a major objective of the Project.

GI WACAF is supported and funded by IMO and seven oil company members of IPIECA, namely BP, Chevron, ExxonMobil, Eni, Shell, Total and Woodside.

More information is available on the Project's website.

2. Introduction

During the 7th GI WACAF Regional Conference held in Cote d'Ivoire in November 2017, several countries expressed their wish to strengthen their shoreline response capabilities should an oil spill occur.

Following discussion with the Ministry of Works and Transport of Namibia, it was decided that Namibia would host this sub-regional activity on shoreline response to oil spills. All the non-francophone Focal Points of the GI WACAF Project were invited to attend this sub-regional workshop in Swakopmund, Namibia.

3. Objectives

The overall objective of the workshop was to provide the the delegates with a comprehensive understanding on how to develop a shoreline clean-up management plan.

The workshop focused on:

1. How to define shoreline clean-up strategies depending on the type of oil spilled, the type of shoreline and the equipment available;
2. How to organize shoreline clean-up response detailing the different techniques;
3. How to decide when to end a shoreline clean-up response, taking into consideration potential impacts of shoreline clean-up and waste management operations on the environment; and
4. How to integrate shoreline response considerations within a national framework for preparedness and response to oil spills.

4. Programme of the Workshop

The Conference was running over four days. The programme, set out in Annex 1, is summarised below:

- *Monday 28th May 2018*
  - Registration
  - Opening ceremony
  - Introduction of the GI WACAF Project
  - Introduction of the Workshop Objectives
  - Introduction of facilitators and participants
  - Presentation from a Benguela Current Commission representative
  - National presentation from Namibia on a shoreline response incident

- Discussion on the status of shoreline response in each country
- Fate and behaviour of oil spills - Shoreline typology and geomorphology

- *Tuesday 29th May 2018*
  - Introduction to shoreline response
  - Shoreline surveys
  - Shoreline clean-up: organisation and management
  - Shoreline clean-up ITOPF video
  - Shoreline protection from a decision-maker perspective
  - Shoreline clean-up: basic techniques (manual Vs. mechanical)
  - Shoreline clean-up: advanced techniques

- *Wednesday 30th May 2018*
  - Shoreline practical Field assessment Working groups Field work exercise debriefing

- *Thursday 31st May 2018*
  - Shoreline waste management
  - Potential impact of shoreline clean-up - Termination of response
  - Review and recommendations
  - Closing Ceremony

5. Location, dates, and participants

The workshop was held at the Sea Side Hotel in Swakopmund, Namibia from 28 to 31 May 2018. It gathered 44 delegates from different ministries and agencies from 8 member countries of the GI WACAF Project, namely Angola, Cabo Verde, Ghana, Liberia, Nigeria, The Gambia, Sierra Leone and South Africa, in addition to Namibia as the host country.

The experts invited to facilitate this workshop were:

- Franck Laruelle, GI WACAF facilitator
- Frédéric Marignac, GI WACAF facilitator

The GI WACAF Secretariat was represented by:

- Clement Chazot, GI WACAF Project Manager
- Julien Favier, GI WACAF Project Coordinator

6. Activities and proceedings

6.1. Opening ceremony

The opening ceremony took place on Monday 28th May at 09:00. The programme of the opening ceremony is available in Annex 1

Clément Chazot, GI WACAF Project Manager, delivered the opening remarks. His speech is set out in Annex 5.

Mr. Pinehas Auene, Deputy Director Marine Pollution Prevention and SAR, Ministry of Works and Transport gave an opening speech on behalf of the Minister as set out in Annex 4.

6.2. Proceedings of the event

DAY 1 - 28th May

Introduction of workshop objectives and presentation of the GI WACAF Project
Clément Chazot – GI WACAF Project Manager

Mr Chazot presented the scope and goals of the GI WACAF Project since its launch in 2006, highlighting the priority actions for the current biennium. The presenter then detailed the objectives and the programme of the workshop. A *tour de table* was carried out to introduce the participants and understand what institutions were represented in the audience. .

Session 1: Presentation of the Benguela Current Commission
Ms. Tandiwe Gxaba, Deputy Executive Secretary to the Benguela Current Commission

The Benguela Current Convention is a formal treaty between the governments of Angola, Namibia and South Africa that sets out the countries' intention "*to promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits.*"

This Convention is implemented by a Secretariat, based in Swakopmund. Named the Benguela Current Commission (BCC), its aim is to foster cooperation between the Republic of Angola, Republic of Namibia and Republic of South Africa and to work towards an integrated, science-based and regional approach for the conservation, protection and sustainable use and management of the BCLME (Benguela Current Large Marine Ecosystem).

Ms. Gxaba presented a general overview of the role of the BCC. She explained the internal working organization between the three countries which populate the Secretariat. She also explained that the convention also deals with oil spill prepardness and response as part of its marine pollution topics.

The audience asked how the Convention and its Secretariat came about. Ms. Gxaba explained that it takes its roots in one of the LME Projects implemented in the past. After seeing the successful

momentum initiated by the said Project, the three countries in question decided to join forces to find a sustainable model to keep the initiative alive.

Session 2: National presentation from Namibia on a shoreline response incident
Mr Pinehas Auene, Directorate of Maritime Affairs, Ministry of Works and Transport

Mr. Auene delivered a presentation on Namibia and its specific features, including the length and type of shoreline and the increase of the risk of oil spill due to the rise of maritime traffic and oil exploration.

Notably, Mr. Auene presented a recent mystery spill that led the country to organise a spontaneous shoreline clean-up, he explained they had no procedures in place in that regard. The said event put into perspective the need to give due consideration to shoreline response within the national spill response arrangements.

Session 3 : ***Discussion on the status of shoreline response in each country***
Mr Clément Chazot, facilitator

The representatives of the various countries in attendance were asked provide some insight on their national oil spill contingency plans with a special focus on shoreline response. Notably, they presented the allocation of responsibility in terms of response at sea and on the shoreline. The objective was to share experience between countries, receive feedback from facilitators and participants alike on how to improve the level of preparedness in shoreline response and overcome barriers. The recommendations are available in chapter 7.

Session 4 : ***Fate and behaviour of oil spills - Shoreline typology and geomorphology***
Mr Franck Laruelle - GIWACAF facilitator

Mr. Laruelle explained it is key to understand the composition and characteristics of the different types of oil in order to quickly assess what response strategy and techniques are likely to be the most efficient when a spill does occur.

The objective of the presentation was to highlight that effects of spilled oil on environmental and economic resources depend heavily on the product's composition and characteristics. It was explained an effective response operation will help mitigate potential damage, and thus needs to be carefully planned.

Conclusion of Day 1 and Introduction of Day 2
Mr Clément Chazot – GI WACAF Project Manager

Mr Chazot thanked the delegates for their participation and introduced the main elements of the second day.

DAY 2 - 29th May

Session 5: Introduction to shoreline response
Mr Frédéric Marignac - GIWACAF facilitator

Mr Marignac presented a general overview of shoreline response. Notably, he highlighted the cleanup phases recognized internationally and gave a summary of the different topics (protection, working site organization, cleanup techniques and termination of cleanup) to be covered during the workshop.

Session 6: Shoreline Surveys
Mr Franck Laruelle - GIWACAF facilitator

Mr Laruelle presented the aim of shoreline surveys which is to assess the impacted shorelines. Starting from there, the responders will be able to define cleanup priorities, select well suited techniques, plan operations and define clean-up objectives to be reached.

To be in a position to conduct the clean-up operations properly, response organizations should provide adequate logistics means, essential tools (GPS, camera, notebook, folding shovel) and appropriate safety gear .

It was explained that one of the key factors for success is to identify trained surveyors with experience in using the SCAT technique.

Session 7: Shoreline clean-up organization and management
Mr Frédéric Marignac - GIWACAF facilitator

Mr Marignac presented examples on how to include shoreline response considerations into the national contingency plan. On a practical level, it means creating a specific shoreline cleanup subdivision within the operations cell with the different levels of authorities (coordinator, on scene commander, beach supervisor...) depending on the scale of the incident.

The second part of the presentation was focused on the internal organization of a work site with the aim to guarantee the efficiency of the response, the safety of the responders and the public and to avoid any secondary oil contamination.

Session 8: Shoreline clean-up ITOPF video

The ITOPF at-sea response video was played.

Session 9: Shoreline protection from a decision-maker perspective
Mr Frédéric Marignac - GIWACAF facilitator

Mr Marignac explained that the first step of shoreline protection is to define key shoreline areas to be protected. Sensitivity maps are a very good tool to achieve this identification step.

The second part of the presentation dealt with the definition of protection strategies following various containment configurations depending on the area, strenghth and direction of the current and forecast/marine conditions. The presenter also mentioned the limits of shoreline protection and technical constraints to maintain booming systems in good working conditions.

To conclude the talk, Mr. Marignac explained that alternative boom protection using local material (straw, nets, wood...) could be considered as an option when lacking manufactured equipment. It was explained that these methods could sometimes prove to be a reliable alternative to manufactured booms.

Session 10: Shoreline clean-up: basic techniques (manual Vs. mechanical)
Mr Franck Laruelle - GIWACAF facilitator

Mr Laruelle explained that basic shoreline clean-up techniques are numerous, but could be separated in two main categories: manual Vs mechanical. In a snapshot, manual recovery is generally more selective but much slower whereas mechanical recovery is faster but with lower selectivity and much higher potential for clean-up damage.

For both approaches, technical experience and skilled workers and/or drivers are paramount for the success of the operation. Generally, the preferred option is often mechanically-assisted manual recovery, at leastfor the first steps consisting in bulk clean-up.

Session 11: Shoreline clean-up: advanced techniques
Mr Franck Laruelle - GIWACAF facilitator

The facilitator first detailed the cleanup phases and then explained what cleanup techniques could be available to decision makers. Various shoreline cleanup techniques are feasible depending on the level of pollution and the type of impacted shoreline. One of the key principles is using water to remobilise / refloat the oil before pumping. Many techniques involve the use of non specialised equipment widely available (public work, farming, hoisting) and could therefore be implemented more rapidly.

To conclude, decision makers should not envisage the response with one single technique. As each case is unique, adaptation is again key for success. Additionally, it should be kept in mind that “aggressive” clean-up techniques may cause more harm than good and could badly affect the environment.

Conclusion of Day 2 and Introduction of Day 3
Mr Clément Chazot – GI WACAF Project Manager

Mr Chazot thanked the delegates for their participation and introduced the main elements of the third day.

DAY 3 – 30th May

Session 12: Shoreline practical exercise
Mr Clément Chazot, Mr Julien Favier, Mr Franck Laruelle and Mr Frédéric Marignac

The third day was dedicated to a practical application of the concepts of shoreline response. The goal of the exercise was to give the opportunity to stakeholders to put into practice their personal experience and technical knowledge acquired during the workshop.

The day was split in 5 phases, each one representing different actions participants would have to face in case of a real oil spill.

Phase 1: Shoreline table-top exercise: strategic aspects
(conference room)

Based on a hypothetical oil spill incident scenario detailed in annex 2, participants were divided in several working groups, and had to develop a shoreline management plan, detailing the oil cleanup response strategies they deemed most suitable.

By the end of phase 1, the participants had to have developed a shoreline response strategy.

Phase 2: Shoreline visit – Reconnaissance
(seafront by the conference venue)

Participants were invited to a field trip to visit the shoreline and identify the oil pollution, which had been simulated thanks to natural ingredients along the shore in front of the conference venue.

To do so, they received a dedicated form to fill in with their observations. This form had to be completed with care, as this was to be used extensively during the next steps of the shoreline practical.

The outcome of the shoreline visit served as a reconnaissance report which guided the actions of the participants during phase 3

Phase 3: Field work organization
(conference room)

This session was dedicated to the field work organisation of the impacted site as observed in phase 2. To do so, participants had to plan the operational aspects of the response on the basis of the information gathered in phase 2.

The field work organization had to be as realistic as possible, given that participants had to implement the field work organisation during phase 4.

Phase 4: Field work exercise
(seafront by the conference venue)

Phase 4 was dedicated to the implementation of the operational plan developed during phase 3. Participants could choose to be either observers or responders. Guided by the facilitators, they initiated the set up of a work site with the equipment they were provided with.

Phase 5: Exercise Debriefing
(conference room)

A 'Hot Wash' debrief was conducted with all the delegates to capture their thoughts on the exercise for inclusion in the report. Facilitators also provided their feedback. A high-level summary of the feedback and recommendations is available page 16 of this report.

Conclusion of Day 3 and Introduction of Day 4

Clement Chazot thanked the delegates for their participation and energy demonstrated throughout the table top and practical phases, and introduced the main elements of the final day.

DAY 4 - 31st May

Session 13: Waste management
Mr Frédéric Marignac - GIWACAF facilitator

Mr Marignac presented the general rules of waste management during and after shoreline cleanup operations. It was explained that the main objective during cleanup operations is to limit the volume of waste collected and avoiding secondary oil contamination, amongst others. Another key point is to supervise and segregate waste by categories to facilitate its storage, transfer and final treatment.

To conclude, the facilitator explained that adequate provisions for waste management should be clearly highlighted within the national oil spill contingency plan.

Session 14: Potential impact of shoreline clean-up - Termination of response.
Mr Franck Laruelle - GIWACAF facilitator

It is always difficult to determine when to terminate a response to an oil spill. Mr Laruelle introduced some keys questions the decision makers can asked themselves to estimate when the response should come to an end. He explained that the termination of response is a result of several factors, including the resource allocation: for instance, oversized clean-up operations may result in further environmental impacts and a longer cleaning period. On the contrary, the proper allocation of human and equipment resources can enable several sites to be cleaned up in a shorter period of time.

The best way to determinate how 'clean is clean' is to develop specific procedures and criteria, for activation and deactivation of the national response, within the national contingency plan which will be followed in case of an incident.

Session 15: Review and recommendations
Mr Franck Laruelle - Mr Frédéric Marignac - GIWACAF facilitators

Facilitators gave more feedback on the exercise carried out the day before. A high-level summary of the feedback and recommendations is available page 16 of this report.

6.3. Closing ceremony

On behalf of IMO and IPIECA, Clément Chazot thanked the delegates for their active involvement and provided each with a USB stick compiling all the presentations and supporting documents used during the event. Further reference materials can be found in Annex 8.

Mr Auene, on behalf of the Minister for Works and Transport, thanked all delegates and experts for the commitment and energy which resulted in a successful workshop, before officially closing it.

7. Feedback and recommendations

Feedback sessions were held with all the delegates and the facilitators at different stages during the week, either during dedicated sessions or whenever the need arose. For the sake of clarity, recommendations are split in two distinct sections:

- Recommendations issued following debriefing of the exercise; and
- General recommendations on shoreline response management

7.1. Exercise debriefing and recommendations

As explained previously, the exercise was made up of different phases. Improvement points and possible ways to reinforce the efficiency of the response are presented below:

Shoreline table-top exercise: strategical aspects
Reference sessions:

- Session 7: Shoreline clean-up organization and management
- Session 9: Shoreline protection from a decision maker perspective
- Sessions 10 & 11: Basic and advanced shoreline cleanup techniques
- Exercise Phase 1

Following a hypothetical scenario, working groups had to define sensitive areas to be protected in priority and establish shoreline clean-up strategies.

As a general feedback, each working group managed to develop a complete response plan, including booming protection as well as cleanup strategies. Participants took into account the sensitivity of threatened areas and used booming deployment to deflect and/or to block the entrance of oil to specific locations. The choice of cleanup techniques depending on the type of shoreline was well considered by the groups. They adapted their cleanup response, taking into consideration the substrate, by favouring high pressure washing operations for port infrastructures and manual collection for sensitive areas.

Overall the exercise's goals were achieved.

Facilitators also identified room for improvement and summarized the main aspects below:

- In case of an oil spill coming from a static source, as defined in the scenario, the two first actions to be carried out are source control and containment of the oil. The best option would have been to deploy a boom around the vessel to avoid spreading, before organising the recovery of the oil. This notwithstaning, this containment strategy depends on how much time is needed to activate the response. If launching a containment operation using booms takes a long time, the oil slick will have already threatened or reached the shore. In this case, booms can still be used with the intent of deflecting the slick or protecting a particular resource. As presented during the workshop, time is crucial during response operations. Prepardness is key to reduce the time needed for activating the response. This implies that:

- Booming equipment should be pre-positioned and stored with all necessary accessories, such as towing and lifting equipment, anchoring kits well suited to the type of seabed (sand, mud, gravels) and in sufficient quantity. This will have to be based on the length of boom available for deployment and possible booming configuration;
- Logistics requirements should be identified in advance, especially tugs involved in the operations. Technical characteristics of each vessel to be potentially mobilized should be included in the operational plan specifying the type and location of cranes, the number and power of winches etc.. For each vessel, create a sketch detailling the optimum positioning of equipment such as reel booms, skimmers, powerpacks… to avoid wasting time during loading operations; and
- For optimal efficiency, an exercise should be scheduled every 6 months to test the time needed to mobilize the response staff and to transfer and load the response equipment on the dedicated vessel.

- Response equipment has to be maintained in a working condition which implies the designation of a maintenance officer in charge to follow up and test it. A maintenance notebook should be established ;
- At sea booming operations requires specific technical knowledge, experience and practice. The best solution for national decision-makers is to provide a response team with training on how to use response equipment, and also include the vessel crew for marine operations (securing, trawling boom...). Planning preparatory meetings with vessel captains to familiarize them with operations is also paramount. Carrying out regular exercises is crucial for success ;
- Effective communication is paramount: supply well suited communication means to response staff on the deck as well as on the bridge of the vessel, to responding vessels, at sea response team and to the command post;
- Assess the risk for all operations, train personnel accordingly and supply them with well suited personal protective equipments.

Shoreline visit – Reconnaissance

Reference sessions:

- *Shoreline assessement*
- *Exercice phase 2*

The objective of the exercise was to familiarize participants with the assessment of an oil impacted shoreline. Two types of activities were planned for this session.

First, participants had to estimate the percentage of spilled oil on four distinct quadrats, as shown on the below picture:

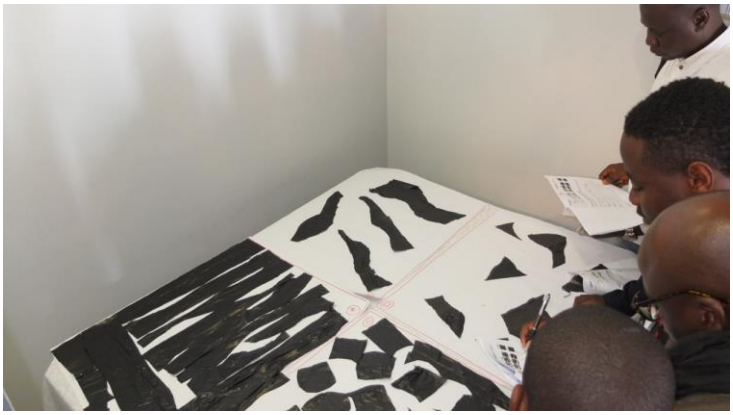


Figure 1. Participants estimating the oil coverage

Then, oil was simulated along the shore in front of the conference venue with a pollutant-like substance made with natural ingredients. Participants had to fill a dedicated form (SCAT form) with their observations. .

In general, groups gave a realistic percentage of oil coverage on panels. During the shoreline reconnaissance, some groups had more difficulty in understanding technical abbreviations and acronyms used in the SCAT form. Significant differences appeared between working groups when they had to evaluate distances. The objective of the exercise was achieved as participants realized that such activity would be better handled by trained and experienced staff.

Facilitators put forward the following improvement points:

- Several templates for SCAT forms are currently available (CEDRE, NOAA...). Each country should choose the adequate form corresponding to its shoreline specificities and/or adapt it if needed;
- Once the content of the form is agreed, national decision makers have to nominate assessment officers in sufficient number depending on the scale of the incident. Two types of assessment officers should be designated: one team for aerial reconnaissance and one team for shoreline reconnaissance. Training and exercises should be scheduled so that identified assessors acquire further experience;
- For both types of reconnaissance, logistics providers should be identified:
  - For aerial surveys, identify potential aircraft providers (army, oil companies, private sector...);
  - For shoreline surveys, determine the type of vehicles needed (4x4, quad bikes, small boats, hovercraft...) depending of the type of shore and identify suppliers; and
  - Include contact details, type of means and, indicative rental price in annexes of the NOSCP.
- Have reconnaissance bags ready for both activities (aerial and shoreline).

See detail in annex 7.

Field work organization and exercise

Reference sessions:

- *Session 7: Shoreline clean-up organization and management*
- *Exercice phases 3 & 4*

This session was dedicated to operational planning. Following the scenario presented in the morning, participants had to plan the organisation of the working site for the impacted area.
Once each working group had finished drafting their plan, they had to set up the working site according to their plan with equipment provided by the host country.

Facilitators put forward the following improvement points:

- Organize any worksite (for instance, the deck of a vessel, onshore) into the following 3 zones depending on the level of risk
  - *Hot Zone: high risk*
    Presence of oil + presence of heavy equipment and personnel (coactivity).
  - *Warm zone : Medium risk*
    Presence of oily waste + spare equipment + decontamination area
  - *Cold Zone: Low risk*
    Rest zone + accomodation + coordination office

  A schematic layout of the about compartementalisation is found below:

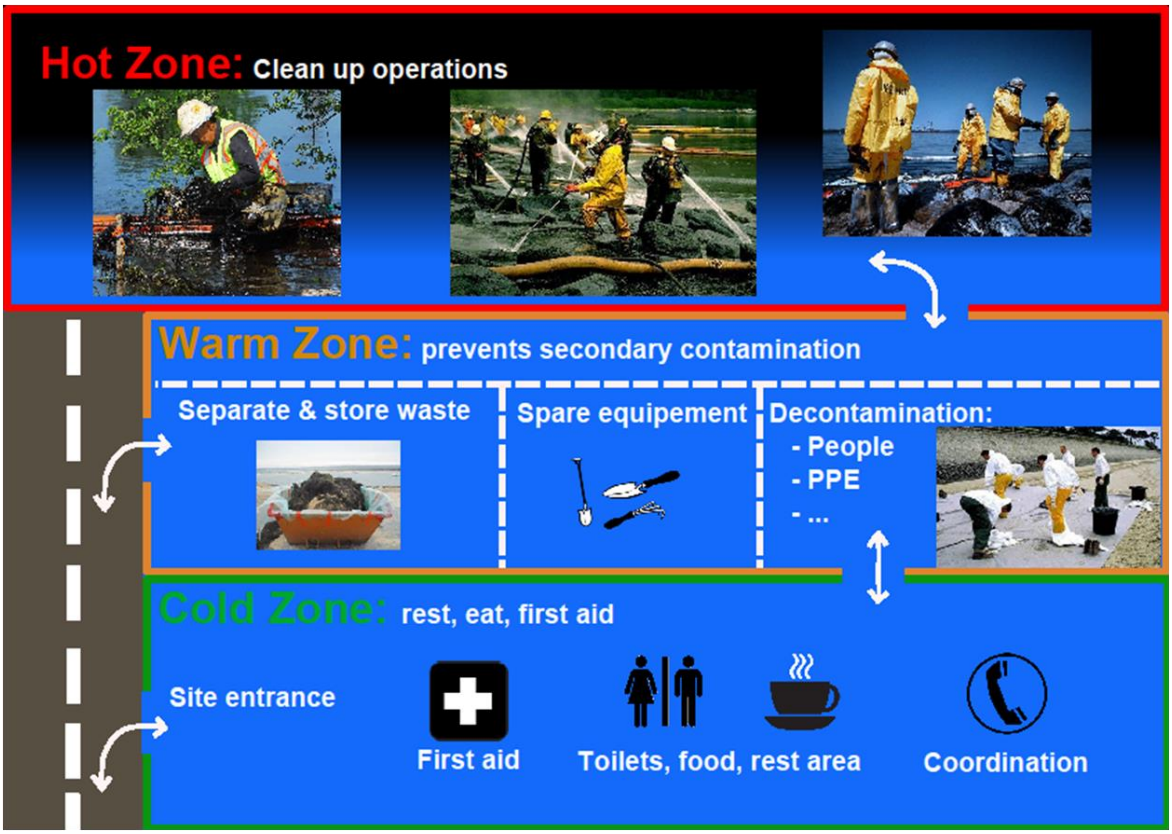


Figure 2. Organization of working site with risk zones: Hot zone, Warm zone, Cold Zone

Facilitators provided further recommendations, namely to:

- Fence off the hot zone to avoid entrance without the required protective equipment;
- Prevent secondary contamination by covering the ground with geotextile where necessary;
- Properly store collected waste as well as spare equipment;
- Plan dedicated access areas for site entrance, waste storage site and responders;
- If needed, involve additional entities like police, in order to handle the traffic, the fire brigade and medics;
- Provide necessary equipment to setup camp: stakes, marking panel, marking tape;
- Develop specific procedures to train responders on how to set-up a work site, how to decontaminate responders, how to segragate collected waste...
  These procedures should be included as annexes to the NOSCP.
- Prepare in advance work site equipement in ready to go boxes.
  See detail in annex 7.

7.2. General recommendations on shoreline response management

These recommandations are classified into planning and operational categories:

Planning recommendations

- For each country, identify the type of oil produced on nationally and ensure available access to their chemical properties on MSDS form (Material Safety Data Sheet). Estimate their weathering properties using oil spill response tool like ADIOS II (NOAA), whose predictions are designed to help decision-makers in developing cleanup strategies based on estimates of how long spilled oil will remain in the environment;

- Develop and/or update shoreline sensitivity maps to identify priorities areas to be protected or cleaned in case of an oil spill. These maps have to be included in the NOSCP to provide information on environmental and economic ressources depending on their vunerability;

- Depending on the shoreline sensitivity, develop strategic protection plans to deflect and/or to avoid entrance of oil in specific areas (water intakes, fisheries, bird nesting areas);

- Conduct research in each country to explore the opportunity to create alternative booming systems using local materials (straw, nets, palm tree leaf, sand barrier...). Determine potential locations on the shore where such options could be used and identify providers (information to be included as annexes to the NOSCP);

- Depending on the type of shore (sandy, muddy, rocky areas) as defined in sensitivity maps, develop shoreline response plans choosing the most suitable clean-up techniques, bearing in mind the objective to avoid environmental damage. The choosen techniques should be written in the strategic shoreline response plan and included in the NOSCP.
  For each selected shoreline technique, a specific procedure should be created detailing its general principles, recommendations on how to perform it properly, inappropriate conduct to avoid, safety considerations...;

- Reinforce national response capabilities with international assistance and developing agreements with neighbouring countries and/or others. The terms of assistance should be formalized in peacetime regarding equipment rental costs, provision of competent staff, customs clearance, transport... Terms of assistance and contacts are to be included in the NOSCP;

- Integrate shoreline reponse management as part of the national oil spill preparedness and response system. Incident management systems (IMS) are generally built around five major functions, namely: command, operation, planning, logistics and finance functions, as shown in the below schematic representation:

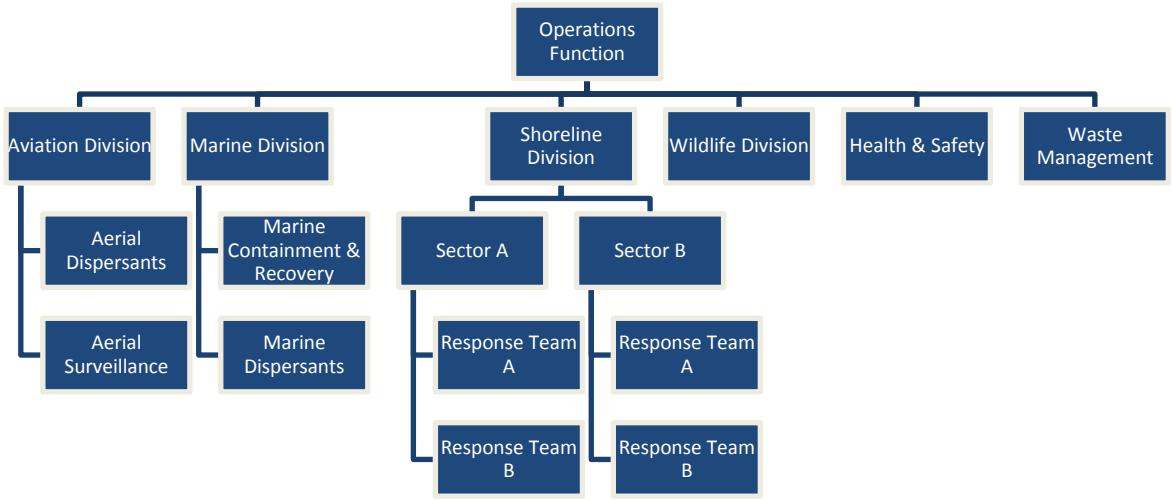
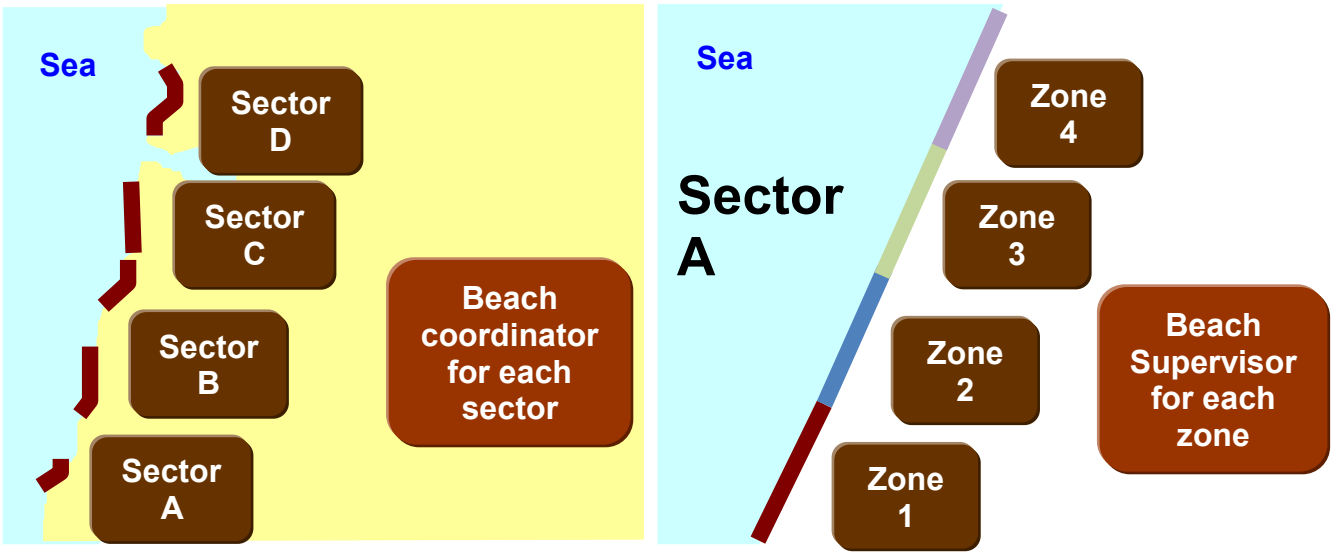


Figure 3. Indicative IMS structure

The above sketch provides details on possible components of an operations function within an incident management team. To optimise the shoreline response operations, the objective is to develop a specific organization adaptable to any scale of oil spill incident. To do so:

- Divide the shoreline in sectors depending on access and types of shoreline. One beach coordinator manages the shoreline response for one sector.
- Each sector is subdivided in zones: Each zone is managed by a beach supervisor.
- Depending on area access and shoreline techniques used, one zone may be subdivided in work sites composed of around 10 responders under the responsability of one team leader.



Example of shoreline response management by sectors and zones

This hierarchy organization facilitates the overall management of the shoreline response and transfer of information.
Each country should develop its own system to collect, update and use various data on shoreline response activities.

- Establish specific shoreline waste management plans to determine the location of temporary storage sites, transportation methods and final disposal sites.
  Try to estimate the volume of waste likely to be collected and calculate the resources required for the estimated volume vs. those that are available.
  Develop procedures to minimise contamination of new sites and segregate waste collected as much as possible;

- Include procedures to determine termination of shoreline clean-up response in the NOSCP;

- As per the rest of oil spill response operations, shoreline cleanup response requires specific knowledge and compentencies. Plan a full training programme of management for the staff and other responders to be involved in shoreline response operations.

Operational recommendations:

- Carry out safety assessesments before starting operations and provide adequate personal protective equipement in line with the assessed risk;

- The national stockpile of oil spill response equipment should be maintained in a working condition. Designate a maintenance officer and develop a maintenace equipment plan outlining periodic testing.

- Develop procedures to operate pieces of equipment, and record information in a maintenance log book;

- Once shoreline cleanup techniques are selected, provide the minimum equipment to initiate cleanup operations. Identify local, national or international providers to complement stocks if necessary. Contacts of service providers have to be detailed in the annexes of the NOSCP;

- Operational protection plans should also be developed, detailing technical specifications such as:
  - Width of the river to be protected;
  - Length of boom and other oil spill response equipment available;
  - Booming plans detailing configuration of the deployment, oil recovery area, anchors...;
  - Composition of the response team and logistic requirements; All strategic and operational protection plans should be included in the NOSCP.

8. Conclusion

It was felt by all, that the objectives for the training and the exercise were completed and it was beneficial for all participants.

As presented in the recommandations, each national organization in charge of oil spill response should update and/or enforce the development of a specific shoreline cleanup plan including:

- Sensitive maps focusing on priorities areas to protect or to clean;
- Waste management plan;
- Provisions for oil spill equipment; and
- Integration of a yearly training program for each level of the response.

The success of the event was confirmed by the unanimous positive feedback received from the participants who considered the objectives of the workshop were met.

Annex 1 Programme

INTERNATIONAL MARITIME ORGANIZATION

GIWACAF

IPIECA THE GLOBAL OIL AND GAS INDUSTRY ASSOCIATION FOR ENVIRONMENTAL AND SOCIAL ISSUES

PROGRAMME

Sub-regional workshop on shoreline response to oil spills

Namibia
28th – 31st May 2018

Global Initiative for Western, Central and Southern Africa

Organised by:

The Ministry of Works and Transport of Namibia

UNITY LIBERTY JUSTICE

The Global Initiative for West, Central and Southern Africa

Launched in 2006, the Global Initiative for West, Central and Southern Africa (GI WACAF) Project is a collaboration between the International Maritime Organization (IMO) and IPIECA, the global oil and gas industry association for environmental and social issues, to enhance the capacity of partner countries to prepare for and respond to marine oil spills.

The mission is to strengthen the national system for preparedness and response in case of an oil spill in 22 West, Central and Southern African Countries in accordance with the provisions set out in the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90).

To achieve its mission, the GI WACAF Project organizes and delivers workshops, seminars and exercises, that aim to communicate good practice in all aspect of spill preparedness and response, drawing on expertise and experience from within governments, industry and other organizations working in this specialized field. To prepare and implement these activities, the Project relies on the Project's network of dedicated government and industry focal points. Promoting cooperation amongst all relevant government agencies, oil industry business units and stakeholders both nationally, regionally and internationally is a major objective of the Project during these activities.

GI WACAF operates and delivers activities with contributions from both the IMO and seven oil company members of IPIECA, namely BP, Chevron, ExxonMobil, Eni, Shell, Total and Woodside.

More information is available on the Project's website.

Dates and location

This event will take place at:

Sea Side Hotel and Spa
P/O box 2765, Swakopmund, Namibia
28th and 31st May 2018.

Workshop Objectives

The general objective of the workshop is to develop a shoreline clean-up management plan during an oil spill incident.

The workshop will focus on:

1. How to define shoreline clean-up strategies depending on the type of oil spilled, the type of shoreline and the availability of equipment;
2. How to organize shoreline clean-up response detailing the different techniques;
3. How to end shoreline clean-up response including potential impact of shoreline clean-up and waste management; and
4. How to take into account shoreline response considerations within a national framework for preparedness and response to oil spills.

Contact

Mr. Clément Chazot, IMO / IPIECA – GI WACAF Project Manager
Tel: +44 (0) 2380 331551 / Cell: +44 (0) 7920 234639
Email: clement.chazot@ipieca.org

Mr. Julien FAVIER, IMO / IPIECA –GI WACAF Project Coordinator
Tel: +44 (0)20 7463 4110 / Cell: +44 (0)7768 966 947 / Fax: +44 (0)20 7587 3210
Email: jfavier@imo.org

Mr. Pinehas Auene, Directorate of Maritime Affairs, Ministry of Works and Transport
Tel: +264 61 22 6848/ Cell: +264 816649188
Email: pauene@mwtc.gov.na

Day 1. Monday 28th May 2018	
09h00 - 09h30	**Arrival and Registration of the participants**
	Opening Ceremony
09h00 - 10h30	**Opening Ceremony:** - Welcome and Safety Briefing - IMO welcoming address - National authority opening address GI WACAF Presentation *Mr Clément Chazot, GI WACAF Project Manager, IMO/IPIECA* *Mr Julien Favier, GIWACAF Project coordinator, IMO/IPIECA*
10h30 - 11h00	**Coffee break**
	Introduction
11h00 - 12h00	Facilitators introductions Participant introductions Workshop introduction
12h00 - 13h30	**Lunch Break**
13h30 - 14h00	**Presentation from the Benguela Current Commission, a sub-regional initiative** *Benguela Current Commission representative*
1400h - 14h30	**National presentation from Namibia on a shoreline response incident** *Namibian representative*
14h30 - 16h15	**Discussion on the status of shoreline response in each country** *International and local participants*
16h15 - 16h30	**Coffee break**
16h30 - 17h15	**Fate and behaviour of oil spills - Shoreline typology and geomorphology** *Mr Franck Laruelle, GIWACAF consultant*
	End of day 1

Day 2. Tuesday 29th May 2018	
	Welcome
09h00 - 9h45	**Introduction to shoreline response** *Mr Frédéric Marignac, GIWACAF consultant*
09h45 - 10h45	**Shoreline surveys** *Mr Franck Laruelle, GIWACAF consultant*
10h45 - 11h15	**Coffee Break**
11h15 - 12h15	**Shoreline clean-up: organisation and management** *Mr Frédéric Marignac, GIWACAF consultant*
12h15 - 13h30	**Lunch Break**
13h30 - 14h00	**Shoreline clean-up ITOPF video**
14h00 - 15h00	**Shoreline protection from a decision-maker perspective** *Mr Frédéric Marignac, GIWACAF consultant*
15h00 - 15h30	**Coffee Break**
15h30 - 16h15	**Shoreline clean-up: basic techniques (manual Vs. mechanical)** *Mr Frédéric Marignac, GIWACAF consultant*
16h15 - 17h00	**Shoreline clean-up: advanced techniques** *Mr Franck Laruelle, GIWACAF consultant*
	End of day 2

Day 3. Wednesday 30th May 2018	
	Welcome
09h00 11h00	**Shoreline visit - Reconnaissance** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
11h00 -12h30	**Shoreline table-top exercise: strategic aspects of the field work organization** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
12h30 13h30	**Lunch break**
13h30 -16h30	**Field work exercise** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
16h30 -17h00	**Exercise Debriefing** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
	End of day 3

Day 4. Thursday 31nd May 2018	
	Welcome
09h00 - 09h45	**Shoreline waste management** *Mr Frédéric Marignac, GIWACAF consultant*
09h45 - 10h30	**Potential impact of shoreline clean-up - Termination of response** *Mr Franck Laruelle, GIWACAF consultant*
10h30 - 10h45	**Coffee break**
10h45 - 12h30	**Review and recommendations** *Mr Franck Laruelle and Mr Frédéric Marignac, GIWACAF consultants*
12h30 - 13h30	**Lunch break**
	Closing ceremony
13h30 - 15h00	**Closing Ceremony** - IMO - Host country
	End of day 4 and Workshop

Annex 2 Exercise scenario

SCENARIO

The 29th of May, the container ship MAERSK CARDIFF is anchored off the port of Walvis Bay. Fishing vessel Jupiter 1, on her way to the port, has propulsion failure and looses her manoeuvring capabilities.
The collision is unavoidable and Jupiter 1 breaches one of the bunker tanks of MAERSK CARDIFF. Oil spills from the container ship.

Situation update:

At sea response is quickly engaged with containment and recovery operations around the container ship.
300 m^3 of IFO 380 strands on the shoreline in different areas.

Technical specifications JUPITER 1:

IMO No.: 8607397
NAME: JUPITER 1
MMSI: 659425000
VESSEL TYPE: FISHING VESSEL
GROSS TONNAGE: 7765
Summer DWT: 3372 t
BUILD: 1990
FLAG: NAMIBIA
HOME PORT: WALVIS BAY

Technical specifications MAERSK CARDIFF:

IMO No.: 9529255
NAME: MAERSK CARDIFF
MMSI: 566756000
VESSEL TYPE: CONTAINER SHIP
GROSS TONNAGE: 50869
Summer DWT: 65458 t
BUILD: 2013
FLAG: SINGAPORE

Maps:


COLISION MAP
COLISION LOCATION
Walvis Bay
Walvis Bay
Walvis Bay
Walvis Bay
Google Earth
5 km
N


WEST SITE
COLISION LOCATION
Walvis Bay
Walvis Bay
Google Earth
3 km
N


SOUTH SITE
Walvis Bay
Walvis Bay
Google Earth
3 km
N


EAST SITE
COLISION LOCATION
Walvis Bay
Walvis Bay
Google Earth
3 km
N

Shoreline practical
30th May 2018

Wednesday 30th May 2018 will be dedicated to a practical application of the concepts of shoreline response. The goal of this exercise is to give the opportunity to stakeholders to put in practice their personal experience and technical knowledge acquired during the workshop.

The day will be split in 5 phases that represent different actions that participants would face in case of a real oil spill.

The objective of this document is to explain the way forward.

Day 3. Wednesday 30th May 2018	
	Welcome
09h00 -11h30	**Phase 1: Shoreline table-top exercise: strategic aspects** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
11h30 -12h30	**Phase 2: Shoreline visit - Reconnaissance** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
12h30 -13h30	**Lunch break**
13h30 -14h30	**Phase 3: Field work organization** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
14h30-16h30	**Phase 4: Field work exercise** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
16h30 -17h00	**Phase 5: Exercise Debriefing** *Mr Franck Laruelle, Mr Frédéric Marignac, IMO/IPIECA Consultant*
	End of day 3

➔ **Phase 1: Shoreline table-top exercise: strategic aspects**
(conference room)

Based on hypothetical oil spill incident scenario detailed below, participants, divided into working groups, will develop a shoreline management plan, detailing the oil cleanup response strategies they deem most suitable. They will be guided during this work by the facilitators.

At the end of phase 1, the participants should have developed a shoreline response strategy.

➔ **Phase 2: Shoreline visit – Reconnaissance**
(seafront by the conference venue)

Oil pollution will be simulated along the shore in front of the conference venue. Participants will be invited to a field trip and will visit the shoreline.

They will be given a template form to fill with their observations. This form should be completed with care, as this will be used extensively during the next steps of the shoreline practical.

The outcome of the shoreline visit will serve as a reconnaissance report and will guide the action of the participants during phase 3.

➔ **Phase 3: Field work organization**
(conference room)

This phase is dedicated to operational planning and the set up of a decontamination site on an impacted area. Building on the outcomes of phase 2, participants will develop a plan on addressing the pollution on the impacted site.
This operational plan will be put into practice during phase 4.

➔ **Phase 4: Field work exercise**
(seafront by the conference venue)

Phase 4 is dedicated to the implementation of the operational plan developed during phase 3.
Participants can choose to be either observers or responders. Guided by the facilitators, they will initiate the set up of a work site with the equipment they will be provided with.

➔ **Phase 5: Exercise Debriefing**
(conference room)

Debriefing session with the facilitators.

Phase 1: Shoreline table top exercise: strategic aspects

General rules

Alert and mobilization phases are not to be considered in order to fully focus on shoreline aspects.
Try to be as realistic as possible taking in account the different working phases detailed in this document.
At the end of Phase 1, dedicated time will be allocated for groups to feedback on the exercise.

Scenario:

Refer to separate scenario document.

Work phases of Phase 1:

You will find below an indicative list of question organized by phases with questions to guide you.
Phase n°1: Shoreline assessment
Depending on the oil pollution risk and vulnerability of the sites, identify key areas to be protected in priority.

Phase n°2: cleanup strategies
Depending on the type of impacted sites, establish shoreline clean-up strategies.
Your strategy should include:

- Containment considerations:

For this shoreline type and waves conditions, does the protection strategy based on containment and/or deflective booms seems feasible?
If yes, define tactical plan detailing booming configuration.

- Response techniques:

Matrix shoreline cleanup response techniques

Following your shoreline response strategy, fill the chart below indicating your choice of shoreline clean-up response techniques for each level of pollution.

Shoreline clean-up response techniques	Low pollution	Moderate pollution	Heavy pollution
Natural cleaning			
Manual recovery			
Mechanical recovery with heavy equipment			
Vacuum recovery system			
Pumping			
Skimming			
Sand screener recovery			
Low pressure flushing			
High pressure washing cleanup			
Flooding			
Ploughing			
Oleophilic drums			
Surf washing cleanup			
Chemical cleanup (use of degreaser)			
Bioremediation			
Others			

Phase n°3: operational considerations

Following the definition of these strategies, define, for each work site, your need for manpower, equipment and logistics requirements.

Specify the source of resources: Public or private sector? National or international?

What suitable protective measure would you take to protected the threatened shoreline?

Phase n°4: waste management

Estimate the volume of waste to collect.

Initiate development of waste management.

Phase 2: Shoreline visit – Reconnaissance

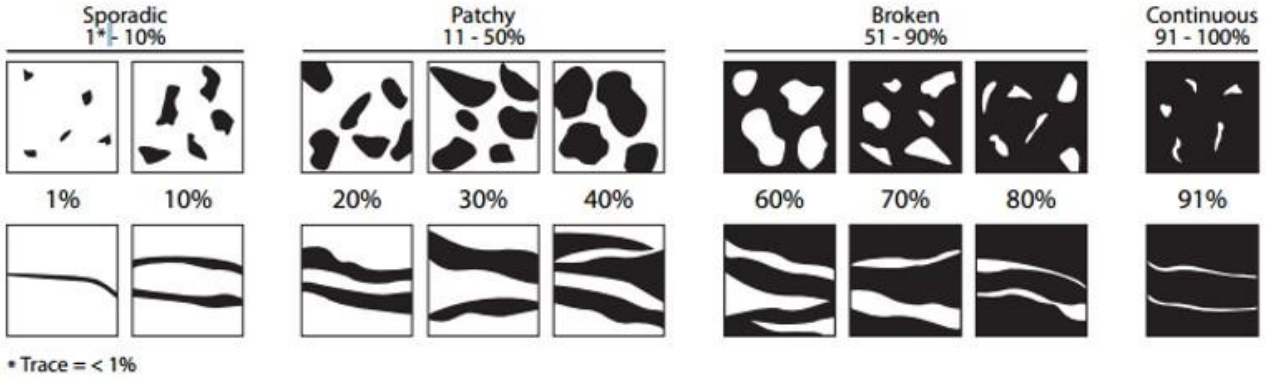
Oil pollution is simulated along the shore in front of the conference venue.
To assess the situation, you will be provided with a form to fill.
For reference, the following pictures show you different levels of contamination.

Light level of pollution

Moderate level of pollution

High level of pollution

Estimate the pollution ratio using the following figure:



Phase 3: Field work organization

This phase is dedicated to operational planning and the set up of a decontamination site on an impacted area. Building on the outcomes of phase 2, participants will develop a plan on addressing the pollution on the impacted site.

Field work phases:

- Discuss suitable technics for this particular impacted area. The following table can be used:

Shoreline clean-up response techniques	Low pollution	Moderate pollution	Heavy pollution
Natural cleaning			
Manual recovery			
Mechanical recovery with heavy equipment			
Vacuum recovery system			
Pumping			
Skimming			
Sand screener recovery			
Low pressure flushing			
High pressure washing cleanup			
Flooding			
Ploughing			
Oleophilic drums			
Surf washing cleanup			
Chemical cleanup (use of degreaser)			
Bioremediation			
Others			

- Set-up the organization of a cleanup work site precising the general organization, including:
  - Hot, warm and cold zones

- Decontamination site
- Equipment staging area
- Waste storage area
- Responders facilities:
- Access areas.

➔ Justify your choice depending on your cleanup strategy.

Phase 4: Field work exercise

Phase 4 is dedicated to the implementation of the operational plan developed during phase 3.

Participants can choose to be either observers or responders. Guided by the facilitators, they will initiate the set up of a work site with the equipment they will be provided with.

Phase 5: Exercise Debriefing

Debriefing session with the facilitators.

Annex 3 List of participants

SUB-REGIONAL GIWACAF WORKSHOP ON SHORELINE RESPONSE TO OIL SPILLS, 28-31 MAY2018, SEASIDE HOTEL AND SPA, SWAKOPMUND

List of Participants (International)

	NAME	INSTITUTION	DESIGNATION	CONTACT DETAILS
1	Mr Joao Lopez Rosario	Agencia Maritime Portuaria, Cape Verde	National focal point for oil pollution	**Tel:** 002382324342 **Cell:** 002389131071 **Email:** rosarlopez@hotmail.com
2	Mr Manuel Xavier	Ministry of Oil - Angola	Environment division	**Tel:** **Cell:** **Email:**
3	Ms Mulalo Popirtia Mutshinyafulo	Department of Transport, South Africa,	Assistant Director	**Tel:**0123093030 **Cell:** 0833976319 **Email:** mutshinm@dot.gov.za
4	Mr Saidyleigh Wandifa	Gambia Maritime Administration	Principle Maritime Surveyor	**Tel**:002204229943 **Cell:** **Email**: wandifa@yahoo.com
5	Mr Numbu Issahaque Sumabe			**Tel:** **Cell:** **Email:**
6	Mr Kojo Agbenor-Efuman	Ghana Environmental Protection Agency	Deputy Director: Oil and Gas	**Tel:** 00233302664697 **Cell**: 00233501301381 **Email:** kojo.agbenor-efunam@epa.gov.gh
7	Mr Julien Favier	GIWACAF	Project Coordinator	**Tel:** **Cell:**44776896696 **Email:** jfavier@imo.org
8	Mr Clement Chazot	GIWACAF	Project Manager	**Tel:** **Cell:**447920234639 **Email:** clement.chazot@ipieca.org
9	Mr Dallas Laryea	IMO	IMO Regional Coordinator for West and Central Sub-Region of Africa (Anglophone)	**Tel:** **Cell:** **Email:** dlaryea@imo.org
10	Frederic Marignac	Le Floch Depollution, France	Facilitator	**Tel:** **Cell:** **Email:**
11	Mr Charles Abel Gono	Liberia Maritime Authority Liberia,	Deputy Commissioner for Vessel Registration	**Tel:** 00231886525718 **Cell:** 00231886525718 **Email:** gblolay@yahoo.com

12	Mr Daniel Tarr	Liberia Maritime Authority	Director Marine Environment Protection	**Tel:** 00231886562227 **Cell:**00231770762227 **Email:** dital2003@yahoo.com
13	Mr Hudul E.N Colley	National Disaster Management Agency, The Gambia	Coordinator	**Tel**:002207780731 **Cell:** 002207780731 **Email:** hudulcolley@yahoo.com
14	Mrs Catherine Chinyere Nwuba	Nigeria Maritime Administration and Safety Agency (NIMASA)	Assistant Director Marine Environmental Management	**Tel:** 002348033748192 **Cell:** **Email:** katenwuba@yahoo.com
15	Mr Olubunmi Akindele	National Oil Spill Detection and Response Agency (NOSDRA)	Acting Director, Oil Filed Assessment Department	**Tel:** 002349069560875 **Cell:** 002348093277903 **Email:** olu.bunmi@outlook.com
16	Mr Dhanabalan Dharmalingam Naicker	SAMSA, South Africa	Manager: Centre for Sea Watch	**Tel:**0027219383310 **Cell:**0027827688401 **Email:** rnaicker@samsa.org.za
17	Mr Alhaji Wurroh Jalloh	Sierra Leone Maritime Administration	Execute Director	**Tel:**0023276601378 **Cell**:0023276601378 **Email:** alhajiwurroh@yahoo.com
18	Mr Ronald Noel Moore	Sierra Leone Maritime Administration	Director of Shipping and Marine Environment Protection	**Tel:** 0023276853061 **Cell:** 0023276355707 **Email:** simaoffice@yahoo.com
19	Dr Franck Laruelle	ITOPF	Facilitator	**Tel:** **Cell:** **Email:**

List of Participants (National)

	NAME	INSTITUTION	DESIGNATION	OT ROLE	CONTACT DETAILS
1	Mr Randell Beukes	Luderitz Town Council	Chief Technician	Equipment Operator	**Cell:**0816039582 **Tel:** 063-207800/36 **Email:** chieftech@ltc.com.na randellrbeukes@msn.com
2	Mr Wayne Handley	Ministry Environment and Tourism, Oranjemund	Warden	Wildlife	**Cell:** 081 2091148 **Tell:** 063 230038 **Email;** metroshpina@iway.na
3	Mr Shedrick Kaseba	Ministry Environment and Tourism, Swakkopmund	Chief Warden	Wildlife	**Tel:** 064404576 **Cell:**0813082165 **Email:** shedrick.kaseba@met.gov.na
4	Ms Bertha N. Katoole	Ministry of Defence	Naval Officer	Planning Officer	**Tel**: 064-2017516 **Cell:**0813535893 **Email**: bkatoole@gmail.com
5	Mr Hendrik Richter	Ministry of Defence	Staff Officer (SOI) Plans-Policy Formulation	Incident Commander	**Tel:** 064 – 2017515/6 **Cell**: 0812752904 **Email:** hendrikrichter401@yahoo.com
6	Mr Sakaria Mekondjo Kolele	Ministry of Defence	Naval Officer	Logistics	**Tel:** **Cell:**0811288684 **Email:** angelgayle@gmail,com
7	Mr Desmond Tom	Ministry of Fisheries and Marine resources	Senior Fisheries Biologist	Shoreline Assessment	**Tel:** 063-202415 **Cell:**0812278681 **Email:** Desmond.Tom@mfmr.gov.na
8	Ms Foibe Nghoongoloka	Ministry of Fisheries and Marine resources	Senior Fisheries Biologist	Wildlife	**Tel:** 063-202415 **Cell:** 0813811318 **Email:** Foibe.Nghoongoloka@mfmr.gov.na
9	Ms Heidi Skrypzeck	Ministry of Fisheries and Marine resources	Senior Fisheries Biologist	Shoreline Assessment	**Tel:**0644101000 **Cell:**0812697279 **Email:** Heidi.Skrypzeck@mfmr.gov.na hskryp@gmail.com

10	Dr Anja Kreiner	Ministry of Fisheries and Marine resources	Senior Fisheries Biologist	Wildlife	**Tel: 0644101158** **Cell: 0812896878** **Email:** Anja.Kreiner@mfmr.gov.na falcora@iway.na
11	Ms Paulina Moses	Ministry of Information and Technology	Acting Senior Information Officer	Public Relations	**Tel:** 064-402763 **Cell**: 0818010092 **Email:** Paulina.Moses@mict.gov.na
12	Mr Dwaine Ndjarunguru	Ministry of Works and transport	Flight Operator Officer	Aerial Observer	**Tel:** 061-379800 **Cell:** +264811624441 **Email:** Dndjaronguru@gatsnam.org johnndredwaine@icloud.com
13	Mr Julius Ngweda	Ministry of Works and Transport	Public Relation Officer	Public Relation	**Tel:** **Cell:** **Email**: JNgweda@mwtc.gov.na
14	Mr Pinehas Auene	Ministry of Works and Transport	Deputy Director	Secretary	**Email:** PAuene@mwtc.gov.na **Tell:**06402086310 **Cell:** 0816649188
15	Mr Joseph Diwanga	Ministry of Works and Transport	Senior Administrative officer	In-water containment /recover	**Tel:** 061-206848 **Cell**:0814518565 **Email**: JDiwanga@mwtc.gov.na
16	Mr Peter Shikongo	Ministry of Works and transport	Administrative Officer	In-water containment/recovery	**Tel:** 064-2086350 **Cell:**0812838940 **Email:** PShikongo@mwtc.gov.na
17	Ms Petrina Kapembe	Ministry of Works and Transport	Senior Administrative Officer	Operations Officer	**Tel:** 063-203969 **Cell:** 0812849236 **Email:** PKapembe@mwtc.gov.na pkapembe6@gmail.com
18	Ms Loretta Rittmann	Ministry of Works and Transport	Chief Administrative Officer	Finance and Administration	**Tel:** 061-226848 **Cell:**0813145147 **Email:** LRittmann@mwtc.gov.na
19	Mr Uanangula Kaputu	Ministry of Works and Transport			**Tel:** **Cell:** **Email:**
20	Mr Gerson James	Namibian Port Authority	Superintendent KPI	Logistics	**Cell:**0813651856 **Tel:** 064-2082434 **Email:** g.james@namport.com.na

					gersonj@iway.na
21	Mr Gerson Nasima	Namibian Port Authority	Pollution Control Officer	Operation Officer	**Tel:** 064-2082332 **Cell:**0813081178 **Email:** Nasimag@namport.com.na
22	Mr Immanuel Dula	Namibian Port Authority	Marine Engineer Officer	Equipment Operator	**Tel:** 06402082202 **Cell**: 0811243034 **Email:** idula34@gmail.com
23	Mr Ndala Josef Chamba	Oranjemund Town Council	Health and Environment	Equipment Operator	**Tel:**063-233500 **Cell:** **Email:**
24	Ms Paulina Engelbrecht	Swakopmund Municipality	Environmental Officer	Shoreline Assessment	**Cell:**0811438766 **Tel:** 0644104523 **Fax:** 0644104128 **Email:** pengelbrecht@swkmun.com.na
25	Mr Kaspar Shimoshili	University of Namibia		Environmental Advisor	**Tel:** 061-2063937 **Cell:** **Email:**
26	Ms Nangula Amutenya	Walvis Bay Municipality	Environmental Coordinator	Shoreline Assessment	**Tel**: 064-214401 **Cell**: 8120224059 **Email:** namutenya@walvisbaycc.org.na nangula.a@gmail.com
27	Mr Riaan Archer	Walvis Bay Municipality	Hazardous Response Officer	Equipment Operator	**Tel:** 064-214401 **Cell**:0811298223 **Email:** rarcher@walvisbaytc.org.na
28	Mr Charles Van Heer Den	Namport Marine Service	Senior Tug Muster		**Tel:**0812841738 **Cell:** **Email:**
29	Mr Frikkie Botes	Ministry of Fisheries and Marine Resource	Chief fisheries Biologist	In-Water Containment/Recovery	**Tel:**064-4101254 **Cell**: 0812240022 **Email:** Frikkie.Botes@mfmr,gov.na

Annex 4 Opening speech from Mr. Pinehas Auene, Ministry of Works and Transport

REPUBLIC OF NAMIBIA

MINISTRY OF WORKS AND TRANSPORT

Office of the Minister

Tel: (061) 208 8812 / 208 8809
Fax: (061) 224 381
Telex: (50908) 709
Telegram: NAMTRANS

Private bag 13341
6719 Bell Street, Snyman Circle
Windhoek
Namibia

Our Ref:.....

Youtr Ref:.....

28 May 2018

Opening address by Honourable John Mutorwa, MP and Minister of Works and Transport, at the official opening of the GIWACAF Sub-Regional Workshop on Shoreline Response to Oil Spills 28-31 May 2018, Sea Side Hotel & Spa Swakopmund, Namibia.

Representatives of the International Maritime Organization (IMO) and the International Petroleum Industry Environmental Conservation Association (IPIECA);

Representatives of participating countries;

Members of the Operations Team of the National Marine Pollution Contingency Plan;

Management and staff of the Ministry of Works and Transport;

Members of the media;

Distinguished ladies and gentlemen;

It gives me great pleasure to extend to you all a very warm welcome on behalf of the Government of Namibia and, in particular, the Ministry of Works and Transport to this important workshop, which is aimed at assisting the region to address the unique challenges associated with shoreline response to oil spills.

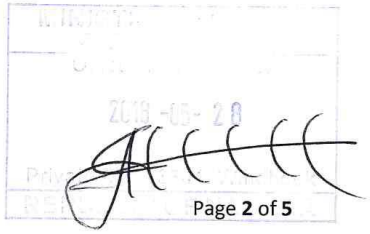
I thank IMO and IPIECA for electing to convene this important meeting in Namibia, back-to- back with the National OPRC Level 2 Oil Spill Response Training Workshop that took place last week in this very same venue.

As a proud member of GIWACAF, Namibia is pleased to have collaborated with the IMO and IPIECA in staging this event, which follows several other GIWACAF activities that were successfully organized in Namibia, most notably the 2013 Bi-Annual Conference which brought together over 130 delegates from the 22 GIWACAF member countries.

It is therefore befitting to acknowledge that the collaboration between Namibia and the GIWACAF project has been growing over the years. We would like to cement this relationship even further, and these two workshops bear testimony to that.

I am encouraged by the progress made by the GIWACAF project since its inception in 2006 in enhancing oil spill preparedness and response capability in the region, especially in regard to developing of national oil spill contingency plans, sensitivity mapping and training and exercises.

Equally, I am happy to see that participation in this important event is not limited to Government representatives but industry representatives are present as well. That, I am informed, is the spirit of the GIWACAF project – government and industry cooperation.



These meetings enable the building of a productive dialogue between GIWACAF member countries and the oil industry. They also provide an invaluable opportunity for networking and establishment of fruitful contacts between countries.

Namibia is giving strong emphasis on improving its marine pollution preparedness and response system in order to mitigate the growing risk of oil and chemical pollution that may result from increasing maritime activities in Namibia.

In addition to the increasing maritime traffic to our ports, Namibia has over the last 25 years attracted significant investments in offshore oil and gas exploration.

Offshore drilling activities pose new and unique risks of marine pollution from incidents of navigation and uncontrolled well blowouts as happened in the 2009 "Montara" incident in Australia, the 2010 "Deepwater Horizon" incident in the US, and the 2012 "KS Endevour" incident in Nigeria. Uncontrolled well blowouts are rare events, but as a budding oil and gas producer, the Namibia has to be prepared for such unfortunate events when they occur.

Accordingly, Namibia has over the last five years embarked on a reform process which culminated in the replacing of the 2007 National Oil Spill Contingency Plan with the 2017 National Marine Pollution Contingency Plan and the activation of the prescribed processes and structures.

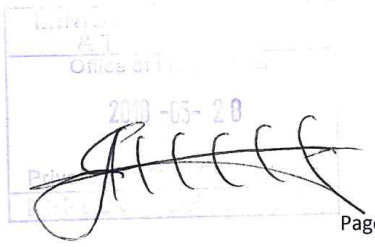
This reform is aimed at ensuring that Namibia achieves all the key elements of preparedness as enshrined in the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) of 1990 and that the National Plan is responsive to the evolving marine pollution risk profile in Namibia.

However, as the National Plan is almost entirely tax-payer funded and there are other competing national priorities, critical projects and activities of the National Plan such as the much needed national marine pollution risk assessment project, equipment renewal and even training and exercises are negatively affected by a lack of sustainable funding mechanisms.

Namibia is therefore looking into the possibility of establishing a dedicated marine pollution fund, the objective of which will be to provide sustainable funding for an effective marine pollution preparedness and response system in Namibia, including response to so-called mystery spills like the recent oil pollution which affected parts of Afrodite Beach north of Walvis Bay and the Walvis Bay lagoon.

Marine pollution, especially oil spills, knows no international boundaries, and no single nation can respond to a large oil or chemical pollution incident without the assistance of other states. As we have learned from the 2010 "Deepwater Horizon" incident, even the most powerful and richest nation in the world could not have managed that spill without outside assistance.

Similarly, during the "Erica" incident off France in 1999, it was demonstrated that without regional cooperation agreements in place, assistance by other European states would have been more difficult and the outcome of the response actions less impressive. The "Deep Water Horizon", "Erica" and other incidents of note highlight the need for regional and international cooperation in oil spill response in line with the OPRC Convention.



However, regional and international cooperation cannot be effective until national preparedness and response systems have reached an acceptable level of development.

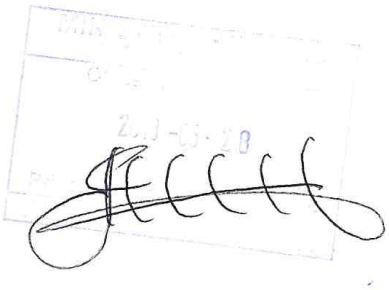
This workshop, as with other GIWACAF activities, will no doubt contribute to the enhancement of national systems and the development of bi-lateral, regional or international cooperation arrangements.

In closing, I thank IMO and IPIECA once again for electing to host this event in Namibia and convey my best wishes for a fruitful and productive event and a very pleasant stay in Namibia.

I also thank our local sponsors for their kind contribution to the hosting of this event in Namibia. They are: DebMarine Namibia, National Petroleum Corporation of Namibia (Namcor), Bachmus Oil and Fuel Supplies, and Sturrock Grindrod Maritime.

I now declare the GIWACAF Sub-Regional Workshop on Shoreline Response to Oil Spills open.

I thank you.



Annex 5 Opening remarks from Clément Chazot, GI WACAF Project Manager

IMO/IPIECA WELCOMING ADDRESS
Clement Chazot, GI WACAF Project Manager

Mr. Pinehas Auene, Deputy Director Marine Pollution Prevention and SAR, Ministry of Works and Transport

Distinguished GI WACAF and IMO Focal Points,

Distinguished delegates,

Ladies, Gentlemen, Dear Colleagues

It is my honour and pleasure to be here at the opening of this sub-regional workshop on shoreline response to oil spills. This meeting is organized by the authorities of Namibia with the support of the International Maritime Organization (IMO) and IPIECA, the global oil and gas industry association for environmental and social issues within the framework of the Global Initiative for West, Central and Southern Africa (GI WACAF Project).

I wish to extend my sincere appreciation to the Government of Namibia and particularly to the Ministry of Works and Transports for hosting and supporting this important event. I would like to express my thanks to Mr. Pinehas Auene and his staff for their significant assistance and efforts in putting together this workshop. These efforts will, I am certain, ensure that this week will result in a fruitful outcome.

The subject that brings us together today is very important for all the countries of West, Central and Southern Africa, in view of their geographical position in an oil producing region with intense maritime traffic, resulting in risks of pollution for the marine environment. Our meeting is a follow up to the several requests raised by delegates from our partner countries during the last Regional Conference of November 2017 to address this particular topic in a dedicated workshop.

Over the next four days, we will thus focus on shoreline aspects of a response in case of an oil spill. From the paramount aspect of defining responsibilities between the competent authorities to the waste management process which can be a source of major logistical problems, the steps of shoreline response will be covered through various sessions. These should be contemplated in peace time, for instance when writing or updating the national contingency plans. This ensures that during an incident, objectives, priorities, constraints and end points for clean-up operations are defined promptly and pragmatically, through an optimal decision-making process.

Over the coming days, the key objective of this workshop is to provide you, delegates, with the essential knowledge and skills to help establish and manage effective shoreline cleanup operations within your respective countries and organisations.

To achieve this goal, two consultants will facilitate the course, namely Franck Laruelle from ITOPF and Frederic Marignac from LeFloch Depollution. They gained hand-on expertise in shoreline response during numerous incidents they attended and continue to attend on a regular basis. They are now recognized internationally as experts in this field, so please do not hesitate to engage and share your experience with them.

We encourage you to participate actively, to ask questions and to foster dialogue this week, to ensure interactive discussions on the issues affecting the oil spill preparedness and response stakeholders. Much can be achieved by the sharing of experiences and we hope to learn from you in practical terms about the successes achieved and the challenges you face in the area of pollution response.

Thank you for your kind attention, and I wish you all a successful workshop.

Annex 6 Evaluation questionnaire

EVALUATION QUESTIONNAIRE
Sub-regional workshop on shoreline response to oil spills
Swakopmund, Namibia, 28th-31st May 2018

Arrangements prior to the activity

1 Was the invitation received in good time? Yes ☐ No ☐

2 Did you receive the information listed below about the event before your participation
- on its objective and scope Yes ☐ No ☐
- subject areas and programme Yes ☐ No ☐

3 Were the instructions on the following clear and easy to understand?
- profile required of participant Yes ☐ No ☐

4 Did you receive logistical information on
- venue Yes ☐ No ☐

5 If you were given any pre-event assignment, was it useful? Yes ☐ No ☐ N/A ☐

During the activity

6 To cover the topics fully, was the event (*please check the appropriate box*)
(1) too long ☐ (2) just right ☐ (3) too short ☐

7 How do you rate the event with regard to the following? (*tick one box in each case*)

	excellent	good	satisfactory	poor
Venue	☐	☐	☐	☐
Facilities	☐	☐	☐	☐
Equipment	☐	☐	☐	☐

8 How do you rate the following aspects of the materials? (*tick one box in each case*)

	excellent	good	satisfactory	poor
Presentation	☐	☐	☐	☐
Clarity	☐	☐	☐	☐
Technical content	☐	☐	☐	☐
Comprehensiveness	☐	☐	☐	☐
Quantity	☐	☐	☐	☐

9 How would you rate the following aspects of the presentations? *(tick one box in each case)*

	excellent	good	satisfactory	poor
Design and structure	☐	☐	☐	☐
Clarity	☐	☐	☐	☐
Technical contents	☐	☐	☐	☐
Comprehensiveness	☐	☐	☐	☐

10 How would you rate the use of the following? *(tick one box in each case)*

	excellent	good	satisfactory	poor
Course materials	☐	☐	☐	☐
IMO reference materials	☐	☐	☐	☐
Other resource materials	☐	☐	☐	☐
Group and practical activities	☐	☐	☐	☐

N/A☐

Field trips	☐	☐	☐	☐

N/A☐

At the end of the activity

11 Please rate each lecturer with regard to the following (*check one box in each case*)

.1 **Franck Laruelle**	excellent	good	satisfactory	poor
content of lecture	☐	☐	☐	☐
delivery of presentation	☐	☐	☐	☐
ability to transfer knowledge	☐	☐	☐	☐
effectiveness in:				
• answering questions	☐	☐	☐	☐
• suggesting solutions to issues	☐	☐	☐	☐

.2 **Frederic Marignac**	excellent	good	satisfactory	poor
content of lecture	☐	☐	☐	☐
delivery of presentation	☐	☐	☐	☐
ability to transfer knowledge	☐	☐	☐	☐
effectiveness in:				
• answering questions	☐	☐	☐	☐
• suggesting solutions to issues	☐	☐	☐	☐

12 What topics were of most interest and relevance to you?

_____

_____

13 Are there any topics which should be added? Yes ☐ No ☐
If yes, please list them:

_____

_____

14 Do you consider that the objective of the event was met? Yes ☐ No ☐

15 Are you likely to use the information you gained on the course when you return to work? Yes ☐ No ☐

16 Will you have the opportunity to transfer the knowledge gained to your colleagues at work? Yes ☐ No ☐

Comments:

_____

_____

_____

_____

_____

_____

We greatly appreciate your time in completing this evaluation questionnaire. It contains important information that will assist GI WACAF in determining the success and impact of the activity. Thank you.

Annex 7 Aditionnal technical informations

➔ **Base camp list stored in "ready to go "boxes:**

As an indication, a team of 10 responsers would be:
- 1 tent (4x4m) or worksite cabin for command post
- 1 tent (6x4m) or worksite cabin for vestuary
- 1 or 2 chemical toilets
- 1 set of communication means
- 100 m^2 of geotextile + 100 m^2 of plastic lining
- 50 wooden and/or iron stakes + sledge hammer
- 200 m of marking tape + rope
- Plastic panels to identify zones, type of wastes, accesses...
- Waste storage capacities depending of the scale of the pollution (bins, skips...)
- Decontamination equipment : soap , fresh water, rags...
- First aid kit + fire extinguishers

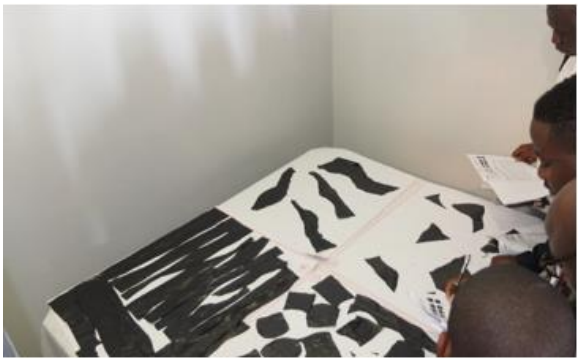
➔ **Aerial and shoreline assessement bags**

- For aerial survey: Backpack bag with digital camera with 18-135 mm zoom, equipped with UV and polarized filter, GPS receiver + manual GPS, additional batteries +battery charger, digital tablet with preloaded maps of concerned areas and clipboard. Helicopter headphone set should be added.
- For shoreline surveys: Backpack bag, digital waterproof camera, Manual GPS + additional batteries +battery charger, telemeter, digital tablet with preloaded maps of concerned areas and clipboard.

Annex 8 Pictures

Family pictures

Table top exercise



Reconnaissance exercise

Annex 9 Reference material

- **IPIECA/IOGP Joint Industry Project technical documentation**

All Good Practice Guides can be found on the following page:
http://www.oilspillresponseproject.org/

- **ITOPF's Technical Information Papers (TIPs):**

All TIPs can be found on the following page:
http://www.itopf.com/knowledge-resources/documents-guides/technical-information-papers/

- **IOPC Funds documentation**

All IOPC Funds documentation can be found online on the following link:
http://www.iopcfunds.org/publications/iopc-funds-publications/