REPORT

Transboundary oil spill response training and exercise

Luanda, Angola
6th – 9th August 2019

Global Initiative for Western, Central and Southern Africa

Organised by:

The Ministry of Mineral Resources and Petroleum

Republic of Angola

NOTE

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Transboundary oil spill response training and exercise between Angola and Namibia
Luanda, Angola, 6th – 9th August 2019.
90 Pages.

Executive summary

Title of the Workshop: Transboundary oil spill response training and exercise

Hosted by: Ministry of Mineral Resources and Petroleum (MIREMPET)

Venue and date:

Ministry of Mineral Resources and Petroleum, Luanda, Angola, 6th – 7th August 2019

SONANGOL P&P crisis management room, Luanda, Angola, 8th – 9th August 2019

Type of event:

First 2 days: **Workshop** (presentations followed by discussions on presented material)

Last 2 days: **Tabletop exercise** based on transboundary spill scenario, in conjunction with Namibia.

Number of participants: The participants numbered around 24 and a list of delegates is attached in Annex 2 of this report.

Organized by: Ministry of Mineral Resources and Petroleum (MIREMPET) of Angola.

Supported by: the International Maritime Organization (IMO) and IPIECA, within the framework of the GI WACAF Project.

Objectives:

The objectives of this activity were to:

- Expose participants to the key issues related to trans-boundary spill incidents;
- Test the communication links between Angola and Namibia;
- Test mechanisms for requesting assistance and mobilization of international resources; and
- Test the National Plans of the two countries in the case of a trans-boundary oil spill incident.

Summary:

This event (workshop and table top exercise) was held simultaneously in Luanda and Walvis Bay from 6th to 9th August 2019 with the intention to test key issues related to trans-boundary spill incidents such as communication between Angola and Namibia, assistance mechanisms, the mobilization of international resources and the provisions of respective national plans that would be activated in the case trans-boundary oil spill incidents. The presentations delivered during the first two days of the activity allowed familiarizing the participants with key elements of the spill response framework in the national context. The tabletop exercise in the second part of the workshop was based on a scenario involving a tanker and a containership. It allowed the participants to put into practice these elements with a special emphasis on the implementation of cooperation mechanisms between both countries from the initial notification of the incident to the development and implementation of a joint response strategy. Both workshop and exercise went well and generated numerous questions and discussions with the participants. Key take-aways and recommendations from the workshop and exercises were discussed with the participants and the experts at the end of the activity and presented in Section 7: Recommendations.

DEBRIEFING ENGLISH

POSITIVES

- **Format of activity** including 2-days training before running the exercise allowed refreshing knowledge of participants on key elements of a national system (National plan, organisation for the management of oil spill incidents), oil spill response strategies, compensation aspects and cooperation framework;

- **Training Session:** Participants stated that:
  - Conference room equipment for Training Workshop (MIREMPET room) was suitable (projectors, flip chart, white board, etc.), including for coffee breaks
  - The fact that the presentations in the training session benefited from the presence of 3 facilitators, making the session more dynamic;

- **Exercise**: It was the first bilateral exercise to test cooperation mechanisms in case of a transboundary spill. The activity raised awareness of the risk of transboundary spills in the region, and on the need for running the same activity with neighbouring countries in the North (DRC, Congo) was identified by Angola;

- **The Emergency Management room** at SONANGOL P&P was overall suitable. It was slightly small for the number of participants and might not be suited in size in case of a real incident. For the present exercise however, the equipment in the room was globally suitable (projector, flip chart, white board, etc.) and, in spite of a somewhat downgraded situation due to a recent cyber-attack of the company, Sonangol P&P made all efforts to support the exercise (IT team mobilised, printing organised, etc.)

- It was the first time that the **Incident Commander** was playing this role, with full mobilisation of the sections of the National Incident Command. He was instrumental in organising the sections, encouraging meetings between the sections. Regular timeouts were organised as well as regular contacts with his Namibian counterpart.

- The **Planning, Operations and Logistics** sections worked together, and they were able to set up Incident Action Plans (IAPs) for offshore and onshore response. (Strategy defined, resources needed identified, transportation of resources worked out, staging areas identified / Moçamedes for aerial dispersion, Tombwa for shoreline response equipment and personnel);

- The **Finance** section was able to start a register of operations undertaken, and costs involved; and

- **Cooperation between government and industry:** All sections were very active and although not mentioned in the debriefing section, the involvement of ACEPA members in the Planning and Operations sections, thanks for their understanding and knowledge of resources available in the industry (sensitivity maps, available ships, dedicated equipment, stocks of dispersant, etc.), allowed mounting operations rapidly, with the support and knowledge of government organisations (e.g. customs and immigration issues, availability of military cargo planes for transportation of the resources, facilitation of transfer of equipment from SONILS Logistics base to the airport, etc.). This link is crucial in case of a real incident, to avoid undue delays in the mobilisation of resources (equipment, personnel and materials).

POINTS THAT COULD BE IMPROVED

- **Incident Command Room.**
  - The Emergency Management room of Sonangol Room, although suitable for SONANGOL's own use, would be limited for a national Incident Command room.
  - Furthermore, a lot of communication problems were experienced at the start of the exercise, due to recent cyberattack which had led to increase access security. Initially there was no IT. Sonangol P&P IT team was mobilised and was required to work around security of access;
  - There should be computers available in the room, with access to Internet / at least one computer for each section.

- As in many exercises, the **lack of communications** was mentioned by various participants.
  - The lack of physical communications (phone lines not active, IT access not possible, etc.) were consequences of the cyber-attack experienced by Sonangol P&P. As mentioned by some participants, this kind of communications breakdown happens also in real situations;
  - Communications within the National Incident Command team were difficult at the start of the exercise: as it is often the case, sections tend to work on their own and rely on timeouts to obtain information, ask questions and attempt to resolve issues. This was corrected by the Incident Commander and, as the exercise developed, contacts and/or meetings were organised between the various sections (Planning and Operations, sometimes joined by Logistics, Finance liaising closely with Logistics and being proactive with other sections as well, to improve their understanding of the development of the response)

- **Response strategies and tactics**.
  - The main **offshore strategy** was to use dispersant. In the exercise, this was easily decided. In a real situation, the lack of a clear policy for use of dispersant in Angolan waters could delay the response;
  - The **sensitivity maps** were used extensively by Operations and Planning, to define the overall strategy, in particular onshore. The full sensitivity mapping project (including the Geographical Information System) is available but MIREMPET and MINAMB should take ownership, so that the system is kept updated and available at all times;
  - Although the strategies and tactics were worked out by the relevant sections, there is a lack of knowledge of what kind of equipment is available in the country and where equipment stockpiles are located (Lobito, Angoflex base, etc.);
  - Access to the coastline by land is likely to be difficult in the area that was threatened by the spill. Access by sea might be necessary. Boats suitable for this type of operation need to be identified;

- **Need for more practical exercises for** members of the National Incident Command team:
  - National exercises should be organised more often to be more familiar with the provisions of the national contingency plan, including roles and tasks members are expected to perform;
  - Training should be provided on oil spill response, procedures, and documentation available to facilitate the management of the response;

DEBRIEFING PORTUGUÊS

PONTOS POSITIVOS

- O formato da atividade, incluindo treinamento de 2 dias antes da execução do exercício, permitiu atualizar o conhecimento dos participantes sobre os principais elementos de um sistema nacional (plano nacional, organização para gerenciamento de incidentes de derrames de hidrocarbonetos, estratégias de resposta a derrames de hidrocarbonetos, aspectos de compensação e quadro de cooperação;

- Sessão de treinamento: Os participantes declararam que:
  - O equipamento da sala de conferências para o Workshop de Treinamento (sala MIREMPET) era adequado (projetores, "flip chart", "white board", etc.), inclusive para "coffee breaks"
  - O facto de as apresentações na sessão de treinamento terem sido feitas por 3 facilitadores, tornando a sessão mais dinâmica;

- Exercício: foi o primeiro exercício bilateral a testar mecanismos de cooperação em caso de derrame transfronteiriço. A actividade aumentou a conscientização sobre o risco de derrames transfronteiriços na região e a necessidade de realizar a mesma actividade com os países vizinhos do Norte (RDC, Congo) foi identificada por Angola;

- A sala de Gestão de Emergências na SONANGOL P&P era de forma geral adequada. Era um pouco pequena para o número de participantes e o tamanho poderia não ser adequado no caso de um incidente real. No entanto, para o exercício atual, o equipamento na sala era adequado globalmente (projetor, flip chart, quadro branco etc.) e, apesar de uma situação um pouco rebaixada devido a um ataque cibernético recente da empresa, a Sonangol P&P fez tudo esforços para apoiar o exercício (equipe informática mobilizada, impressão de documentos organizada, etc.)

- Foi a primeira vez que o comandante de incidentes estava desempenhando esse papel, com total mobilização das seções do comando nacional de incidentes. Ele foi fundamental na organização das seções, incentivando reuniões entre as seções. Foram realizadas reuniões de coordenação ("timeout") regularmente, bem como contatos regulares com o seu homólogo da Namíbia.

- As seções Planeamento, Operações e Logística trabalharam juntas e conseguiram estabelecer Planos de Acção do Incidente (IAPs) para resposta tanto "offshore" como "onshore" (Estratégia definida, recursos necessários identificados, transporte dos recursos elaborados, áreas de preparação identificadas / Moçamedes para dispersão aérea, Tombwa para equipamento de resposta da costa e pessoal);

- A seção Finanças conseguiu iniciar o registro das operações realizadas e dos custos envolvidos; e

- Cooperação entre governo e indústria: todas as sessões foram muito activas e, embora não mencionadas na sessão cção de "debriefing", o envolvimento dos membros da ACEPA nas secções de Planeamento e Operações, graças à compreensão e conhecimento dos recursos disponíveis na indústria petrolífera (mapas de sensibilidade, navios disponíveis, equipamentos dedicados, estoques de dispersantes, etc.), permitiram estabelecer operações rapidamente, com o apoio e o conhecimento de organizações governamentais (por exemplo, questões de alfandêga e de imigração, disponibilidade de aviões militares de carga para transporte de recursos, facilitação da transferência de equipamentos da base logística SONILS para o aeroporto, etc.). Esse vínculo é crucial no caso de um incidente real, para evitar atrasos indevidos na mobilização de recursos (equipamentos, pessoal e materiais).

PONTOS QUE PODERÃO SER MELHORADOS

- ***Sala de comando de incidentes.***
  - *A sala de Gestão de Emergências da Sonangol P&P, embora adequada para uso próprio da SONANGOL, seria limitada para uma sala nacional de Comando de Incidentes.*
  - *Além disso, muitos problemas de comunicação ocorreram no início do exercício, devido ao recente ataque cibernético que levou ao aumento da segurança do acesso. A equipe de Informática da Sonangol P&P foi mobilizada e solicitada a solucionar a segurança do acesso;*
  - *Deve haver computadores disponíveis na sala, com acesso à Internet / pelo menos um computador para cada seção.*

- ***Como éo caso em muitos exercícios, a falta de comunicação foi mencionada por vários participantes.***
  - *A falta de comunicação física (linhas telefônicas inativas, acesso à Informática impossível etc.) foram consequências do cibe ataque sofrido pela Sonangol P&P. Como mencionado por alguns participantes, esse tipo de falha de comunicação ocorre também em situações reais;*
  - *As comunicações dentro da equipe do Comando Nacional de Incidentes eram difíceis no início do exercício: como geralmente acontece, as seções tendem a funcionar por conta própria e dependem de reuniões de coordenação (timeouts) para obter informações, fazer perguntas e tentar resolver problemas. Isso foi corrigido pelo Comandante do Incidente e, conforme o exercício foi desenvolvido, foram organizados contatos e / ou reuniões entre as várias secções (Planeamento e Operações, às vezes acompanhadas pela Logística, Finanças, estreitando contato com a Logística e sendo proativo com outras seções, para melhorar sua compreensão do desenvolvimento da resposta)*

- ***Estratégias e táticas de resposta.***
  - *A principal estratégia de resposta no alto mar ("offshore") foi usar dispersante. No exercício, isso foi facilmente decidido. Numa situação real, a falta de uma política clara para o uso de dispersante nas águas angolanas poderia atrasar a resposta;*
  - *Os mapas de sensibilidade foram usados extensivamente pelas Operações e Planeamento, para definir a estratégia de resposta geral, em particular em terra. O projeto de mapeamento de sensibilidade completo (incluindo o Sistema de Informações Geográficas) está disponível, mas o MIREMPET e o MINAMB devem assumir a propriedade, para que o sistema seja mantido atualizado e disponível o tempo todo;*
  - *Embora as estratégias e tácticas tenham sido elaboradas pelas secções relevantes, há um desconhecimento de que tipo de equipamento está disponível no país e onde estão localizados os estoques de equipamentos (Lobito, base Angoflex, etc.);*
  - *O acesso à costa por terra provavelmente será difícil na área que foi ameaçada pelo derramamento. O acesso por mar pode ser necessário. Barcos adequados para esse tipo de operação precisam ser identificados;*

- ***Necessidade de mais exercícios práticos*** *para os membros da equipe do Comando Nacional de Incidentes:*
  - *Exercícios nacionais devem ser organizados com mais frequência para familiarizar-se com as disposições do plano nacional de contingência, incluindo papéis e tarefas que os membros devem desempenhar;*
  - *Deve ser fornecido treinamento sobre a resposta a derramamentos de óleo, procedimentos e documentação disponíveis para facilitar a gestão da resposta;*

Contents

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 advancing environmental and social performance, 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.

1 Introduction

This document provides an overview of the training and transboundary exercise carried out in Luanda, Angola from 6th to 9th August 2019.

Part of the report is written in Portuguese (see table of contents above) to allow a better understanding of this document for a wider audience.

2 Objectives

The objectives of this activity were to:

- Expose participants to the key issues related to trans-boundary spill incidents;
- Test the communication links between Angola and Namibia;
- Test mechanisms for requesting assistance and mobilization of international resources; and
- Test the National Plans of the two countries in the case of a trans-boundary oil spill incident.

3 Programme

The programme of this activity was split in 2 parts.

The first part (6th – 7th August) consisted in a training workshop to provide the participants with reminders on the national systems in place, the national organisation for the management of oil spill preparedness and response, technical aspects of oil spill response, compensation systems in place as well as applicable cooperation mechanisms.

The second part of the programme (8th-9th August) consisted of a tabletop exercise.

The original programme provided in Annex 1 was slightly amended during the activity. The summary of the material presented in Part 1 and the outcome of the exercise are provided in Sections 5 and 6 respectively.

4 Location, dates, and participants

The training workshop took place from 6th to 7th August at the Ministry of Mineral Resources and Petroleum (Ministério dos Recursos Minerais e Petróleos) - MIREMPET, in Luanda.

The table top exercise took place from 8th to 9th August in the Emergency Management Centre of SONANGOL P&P, in Luanda.

The list of participants is provided in Annex 2. It consisted of representatives of national agencies involved in oil spill response operations as well as representatives to the oil industry of Angola (ACEPA), including organisations mentioned in the table below.

Ministério dos Recursos Minerais e Petróleos Angola (**MIREMPET**)	Ministry of Mineral Resources and Petroleum Angola
Ministério do Ambiente (**MINAMB**)	Ministry of Environment
Agência Nacional de Petróleo, Gás e Biocombustíveis (**ANPG**)	Angola National Agency of Oil, Gas, and Biofuels
Administração Geral Tributária (AGT) - Ministério das Finanças (**MINFIN**)	Ministry of Finance - General Tax Administration
Instituto Marítimo e Portuário de Angola (IMPA) - Ministério dos Transportes (**MINTRANS**)	Maritime and Port Institute of Angola
Ministério da Defesa - Marinha de Guerra Angolana – **MINDEF**)	Ministry of Defence - Angolan Navy
Ministério das Pescas e do Mar (**MINPESMAR**)	Ministry of Fisheries and the Sea
Ministério do Interior – Protecção Civil e Bombeiros – (**MININT)**	Ministry of Interior – Civil Protection and Fire Brigade
Ministério das Relações Exteriores (**MIREX**)	Ministry of Foreign Affairs
Ministério do Interior-Serviço de Migração e Estrangeiros de Angola (**SME**)	Ministry of Interior - Immigration services
Sonangol EP	SONANGOL EP
Sonangol PP - QSSA	SONANGOL PP - QHSE
BP Angola	BP Angola
Esso Angola	Esso Angola
Total EP Angola	Total EP Angola

5 Training workshop (6th-7th August)

DAY 1: *6th August 2019*

Opening ceremony

Opening of the activity

The Secretary of State of the Ministry of Mineral Resources and Petroleum, Her Excelency José Alexandre Barroso, welcomed the participants and officially declared open the training and exercise.

GI WACAF welcome speech

Julien Favier, GI WACAF Project Manager

In his welcome speech, the representative of the GI WACAF Project welcomed the participants to this activity on behalf of the International Maritime Organization (IMO) and IPIECA and expressed appreciation to the Government of Angola and particularly to the Ministry of Mineral Resources and Petroleum (MIREMPET) for organising and supporting this event. He briefly reminded that the activity is run simultaneously in Angola and Namibia, in order to assess the joint response to transboundary oil spills.

Proceedings of the workshop

GI WACAF Project update

Julien Favier, GI WACAF Project Manager

Julien Favier presented the general objectives of the GIWACAF Project and the respective roles of IMO and IPIECA. Julien then presented the achievements and the progress made in the region measured against GI WACAF project indicators for more than 10 years as well as the challenges faced by countries in the region and the targets set-out for the 2018-19 cycle. Julien then introduced the current workshop and exercise, highlighted the objectives and presented expected outputs.

Regulatory and Institutional Aspects of Oil Spill Contingency Planning – OPRC 90

Julien Favier, GI WACAF Project Manager

Julien Favier presented the role of the International Maritime Organization (IMO) in regulating the shipping industry since its inception in 1948. He reminded the main provisions of the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC 90) which was developed following the Exxon Valdez incident in 1989 with the intention to provide a framework for oil spill preparedness, response and cooperation worldwide. He reminded that the OPRC 90 provides an international legal instrument enabling preparedness and response to oil spills of countries, parties to the convention, by focusing on organizing the response and the distribution of responsibilities. It also seeks to promote cooperation, between governments and the oil industry, as well as cooperation between countries, with assistance of the IMO.

Role of ITOPF

Dr. Duarte Soares, ITOPF

Dr. Duarte Soares gave a brief presentation of ITOPF, its history since its creation in 1968, membership. Its role during shipping incidents was highlighted as well as other the provision of technical advice and the assessment of claims. Technical services provided by ITOPF were also presented, ranging from consultancy services for oil spill contingency planning, to training, participation in exercises and providing information services.

Overview of the NOSCP

Manuel Xavier, Director of Health Safety and Environment (HSE) of the Ministry of Mineral Resources and Petroleum.

Mr Manuel Xavier presented the Angolan preparedness and response system, and specifically the National Oil Spill Contingency Plan (**(PNC -** *Plano Nacional de Contingência Contra Derrames de Petróleo no Mar de Angola*). The PNC was approved by the government of Angola in 2008 and is currently being revised. Manuel Xavier presented the current organisation of the PNC, for preparedness and response to oil spills in Angolan waters, thus the articulation between the National Oil Spill Commission, the Technical Committee and the National Incident Command. The organisation for the management of the response to oil spill incidents is based on the IMS system and includes both representatives of the Angolan government and of the Angolan oil industry. The current dispersant use policy was briefly presented, and Manuel Xavier highlighted that this policy is presently being reviewed.

Oil spill risks and Environmental and socio-economic sensitivities in Angola

Manuel Xavier, Director of Health Safety and Environment (HSE) of the Ministry of Mineral Resources and Petroleum.

Mr Manuel Xavier provided an overview of changing risk profile associated with maritime activities in Angola, including the increase in offshore oil exploration and production, the increase of marine traffic – marine traffic associated with the oil production, intense marine traffic in and out of Angolan ports and along the coast. The sensitivity of the marine environment and existing socio-economic resources was sketched, and Manuel Xavier outlined that a full sensitivity mapping of the coastal area of Angola was done, consisting of identifying the most sensitive sites, assessing the priority of protection of these sites, and defining individual protection plans. Manuel Xavier then presented suggestions and proposals for improvement of the National Plan, which are guiding the current revision of the PNC.

Environmental sensitivity mapping

Elliane Correia, Total E&P Angola

Mrs Elliane Correia presented the Coastal Sensitivity Mapping project of Angola, which was decided as a result of a workshop held in 2010 in Luanda and organised jointly by the Ministry of Mineral Resources and Petroleum and the GI WACAF. It was then developed as a joint project launched in 2011 between The Ministry of Mineral Resources and Petroleum (MIREMPET), the Ministry of Environment (MINAMB), the Association of oil exploration and production companies (ACEPA), and Sonangol. The map covers the entire coastline of Angola: Northern part (from Luanda to Soyo and Cabinda): 2011 – 2013 and Southern part (from Luanda to the border with Namibia: 2013-2015). The coastal sensitivities were mapped using international guidelines (including the 2012 IMO-IPIECA guideline) using the Environmental Sensitivity Index (ESI index) to classify the various types of coastline

encountered in Angola, identifying and mapping the sensitive ecosystems, habitats, species and important natural resources, including their seasonality, as well as sensitive socioeconomic activities. The mapping involved a full helicopter survey of the entire coastline, as well as site visits of the most sensitive sites, for ground proofing. The project resulted in the setting up of a full Geographical Information System, which can be used to produced maps, and kept updated. A full set of various types of maps and documents was produced: Strategic Maps, Tactical maps, and site protection plans for the most sensitive sites identified. This constitutes a very valuable tool, in case of an oil spill incident.

Command and control of Spill Response

Dr. Duarte Soares, ITOPF

Dr. Duarte Soares presented the key elements of effective management of oil spill response operations. He addressed the main challenges, including the communication amongst various stakeholders that would be involved throughout the response, the importance of scaling the operations and resources through a tiered response approach and efficient organisational structure using function- and/or team-based systems. The steps of response progression from an initial chaotic/reactive phase and the transition to a management, objective-driven phase were presented including notification, evaluation, mobilisation, the development of response strategies, resource management, downsizing, termination, review and cost recovery.

DAY 2: *7th August 2019*

At-sea response

Jean-Yves Huet, OTRA

Jean-Yves Huet started the presentation with a reminder of the different types of oil, their characteristics and behaviour at sea. The importance of setting-up a comprehensive monitoring plan with regular aerial surveillance carried out throughout the response was emphasized in order to assess the extent and quantity of oil and guide response operations at sea. The main response techniques including chemical dispersion, containment and recovery an in-situ burning were then presented with their respective advantages and limitations depending on oil characteristics (especially viscosity) and MetOcean conditions. Finally, shoreline protection, including the identification of priority sites using sensitivity maps and protection techniques was addressed for various shoreline types.

Shoreline response

Dr. Duarte Soares , ITOPF

Dr. Duarte Soares first reminded the importance of assessing the situation by gathering information from the field through aerial surveillance and joint shoreline surveys. The different stages from primary clean-up techniques to remove the bulk oil to secondary, more refined techniques such as flushing and surfwashing were presented with an emphasis on their respective merits in terms of effectiveness, selectivity and impact to the environment. Finally, the termination of shoreline clean-up operations was presented showcasing the importance of agreeing on measurable termination criteria through the organisation of joint surveys involving all the response stakeholders and the authorities.

Oiled wildlife

Jean-Yves Huet, OTRA

The effect of oil on the main categories of species that are vulnerable to oil spills including marine birds, turtles and mammals was presented. As well as at-sea and shoreline response strategies, Romain Chancerel highlighted the importance of the assessment phase to gather baseline information on the wildlife present on the shoreline and, once the oil as reached the shoreline, the extent of wildlife that has been contaminated. Oiled wildlife response techniques were then presented including prevention measures (deterrence and pre-emptive capture), capture and rehabilitation (stabilization, decontamination, conditioning and release). The presentation finally insisted on the importance of the integration of oiled wildlife strategy, including euthanasia within the overall response plan to ensure an efficient use of resources.

Introduction to IMO's international oil spill liability and compensation Conventions

Julien Favier, GI WACAF coordinator

Julien Favier presented the international liability and compensation framework and their respective scope and limitations. The presentation highlighted the underlying principles of these Conventions, especially the concepts of limitation of liability and strict liability. A special attention was drawn to the Conventions associated to spills of persistent oil from tankers, namely the 1992 Civil and Liability Convention (CLC 92), the 1992 Fund Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage and the Protocol to the 1992 Fund Convention (Supplementary Fund Protocol) which was adopted in 2003. The Bunker Convention (not ratified by Angola) was also presented as it provides the international framework for non-tanker ships with a single level compensation system based on the CLC 92 model for spill or risk of a persistent oil spill from any non-tanker ship in the EEZ of a Member State. However, it does not set limits of liability, which is why the Convention on Limitation of Liability for Maritime Claims 1976 (LLMC 1996) is complementary. Alternatively, a national limitation can be implemented.

ITOPF short video: oil spill compensation

Dr. Duarte Soares , ITOPF

ITOPF short video on oil spill compensation was shown to showcase the key principles of the international liability and compensation regimes presented in Julien's presentation as well as existing procedures for the preparation and submission of claims by affected parties and their assessment by the P&I insurer.

Record keeping and Claim formulation

Dr. Duarte Soares , ITOPF

Following the projection of ITOPF video, Duarte Soares provided details on the concepts of admissibility and reasonability as defined in the IOPC Fund Claims Manual. Duarte highlighted the importance of record keeping during the incident in order to provide as much evidence as possible and ensure a rapid processing of the claim by the insurer. Following the presentation, a short exercise was organised, where participants were requested to play the role of a P&I club expert reviewing a fictional claim, assessing its reasonability and identifying missing information.

International Cooperation in Spill Response

Dr. Duarte Soares , ITOPF

Duarte Soares presented two case studies showcasing the different aspects of international cooperation. First, the sinking of the Tanker PRESTIGE (2002) containing 77,000 MT of heavy fuel oil which impacted the shoreline of Northern Spain and France was a good example of integration of response resources at the regional level. The grounding at the entrance of the Port of Karachi, Pakistan, of Tanker TASMAN SPIRIT leading to the release of 30,000 MT of light crude oil was another example of international cooperation with the rapid mobilisation of Tier 3 resources such as the OSRL Hercules aircraft for the large-scale spraying of chemical dispersant.

Presentation of the exercise rules

Jean-Yves Huet, OTRA

Jean-Yves Huet presented the rules of the exercise including the objectives, the participants from Angola and Namibia, the Control Team and external role players (OSRL and IMO), the timeline and the specific rules of the exercise ("EXERCISE EXERCISE EXERCISE", pre-set MetOcean conditions, etc.). Participants in the exercise were split into the various sections of the National Incident Command which would be set up for the exercise.

6 Transboundary tabletop exercise

6.1 Exercise objectives

The specific objectives of the exercises were discussed between the authorities of Namibia and the GI WACAF Project and were formulated as follows:

- Expose participants to the key issues related to trans-boundary spill incidents
- Train the participants on the existing transboundary arrangements and on topics related to the exercise;
- Test the communication links between Angola and Namibia;
- Test assistance mechanisms and mobilization of international resources;
- Test the National Plans of the two countries in the case of a trans-boundary oil spill incident

6.2 Exercise scenario

The scenario developed for this exercise involved the collision of a fully laden oil tanker (MALAVITA) and a container ship (SUNWAYS) offshore Namibia at 70NM from the Angolan border, leading to the release of a significant amount (>1000 MT) of medium crude oil at sea. The MetOcean conditions set for the exercise would transport the oil to a North Easterly direction resulting in large segments of shoreline being affected in Namibia and in Angola.

Figure 1: oil trajectory (green line and time markers) according to the MetOcean conditions provided for the exercise and results of aerial surveillance provided to the participants in injects 4, 7 and 9.

6.3 Exercise timeline

The exercise started in Namibia on 8th August, 08:30 am local time with INJECT 1 (email) from the Tanker's ship agent based in Walvis Bay, to the Ministry of Works and Transport (MWT) with a pollution Report (POLREP) providing provisional information on the incident and pollution at sea. The provisional timeline was proposed as follows:

- INJECT 1: Namibia, 08:30am BST+1, 08/08/2019
- Notification of Angolan authorities expected between 9:30 – 11:00 BST+1
- Lunch break expected 12:00 – 13-00 pm on day one
- End of day one expected at 16:30pm
- Day 2 - Exercise resume at 9:30
- Last inject : 11:00 am BST+1, 09/08/2019
- End of the exercise: expected 12 pm on 09/08/2019
- Hot wash after lunch

All injects were sent by email by the Ship Agent of tanker MALAVITA (based in Walvis Bay) to Mr Pinehas Auene (Namibia) and Mr Manuel Xavier (Angola) using a mail box created for the purpose of the exercise (malavita.agent@gmail.com). The list of injects is provided in the following table (actual injects are available in Annex 6). Adjustment in the timing of the injects was done during the exercise as reflected in the proceeding of the exercise (Annex 5).

Injects	BST +1	From	To	What	Status
Inject 1	**08:30**	Agent	MWT	POLREP	OK
Inject 2	**10:00**	Agent	MWT	ITOPF assessment	OK
Inject 3	**11:00**	Agent	MWT	Inspection report	OK
Inject 4	**13:00**	Agent	MWT	Aerial 1	OK
Inject 5	**14:00**	Agent	MWT / MIREMPET	OSRL logistics	OK
Inject 6	**15:00**	Agent	MWT / MIREMPET	Radar satellite	OK
End of day 1					
Inject 7	**09:30**	Agent	MWT/MIREMPET	Aerial 2	OK
Inject 8	**10:00**	Agent	MWT / MIREMPET	Angry fishermen	OK
Inject 9	**10:30**	Agent	MWT / MIREMPET	Aerial 3	OK
Inject 10	**11:00**	Agent	MWT / MIREMPET	Minister request details for press Conference	OK
End of exercise					

6.4 Exercise rules

The rules of the exercise were the following:

MetOcean conditions
Wind and current conditions were provided in the exercise inject by the control team
(Angola: communicated by Namibia during the exercise)

Time-outs
Exercise control team to call a time-out if/when required.

External communication
Any communication (written or oral) should start by EXERCISE – EXERCISE – EXERCISE

- Angola: played as real
- South Africa : use SAMSA delegates present in the room (in Namibia)
- OSRL : Tel : +44 (0)23 8033 1551, ask for duty Manager
- IMO : Contact details : Clément Chazot cchazot@imo.org, Tel : +44 (0) 20 7463 4002
- Communication with ship representatives (vessel captain, ship owner, cargo owner, P&I Club) will be done through the ship agent in Walvis Bay (played by exercise control team) using the provided contact details:
    - Email : malavita.agent@gmail.com
    - Tel: +264 (0) 816470919

6.5 Exercise debriefing – in English and em português

A debriefing was organised with the participants at the end of the exercise. As shown in

, the debriefing was done by section of the National Incident Command teal. The table captures the points discussed with the participants following the exercise during the debriefing session.

Table 1: Debriefing of participants

	PORTUGUÊS	ENGLISH
	COMANDO	**COMMAND**
	Funcionou bem	Worked well.
	Primera vez que Eng. Xavier foi IC	First time Eng. Xavier was IC
	Comunicação com Namíbia / não foi fácil	Communication with Namibia / was not easy
	Deveriam existir computadores para cada secção, com acesso a internet.	There should be computers for each section, with internet access.
	Necessidade de realizar mais exercícios práticas	Need for more practical exercises
	Necessidade de melhor entendimento das tarefas de cada secção	Need for the tasks of each section to be better understood.

	PORTUGUÊS	ENGLISH
	Necessidade de melhor conhecimento do que existae no país / por exemplo a existência de navios, aeroportos, etc.. Recursos de companhias privados (ex. Angoflex, portos)	Need for better knowledge of what exists in the country / e.g. in Lobito, Benguela ships, airports etc. Private companies resrouces (e.g. Angoflex, ports)
	Base de dados do Plano deve ser estendido.	Plan database must be extended.
	Necessidade de planear exercício similar com vizinhos do Norte (Congo, DRC).	Need to plan similar exercise with Northern neighbors (Congo, DRC).
	PLANEAMENTO	**PLANNING**
	Foi bom no Geral	Overall was good
	Treinamento : apresentações muito boas. 3 apresentadores ajudaram na dinâmica do Workshop.	Training: Very good presentations. 3 presenters helps the dynamics of the workshop.
	Instalações do MiremPet : Muito boas incluindo coffee breaks.	MinPet facilities: including very good coffee break.
	Faltou um pouco de procedimento na resposta, ex. documentação etc.	Lack of procedure in response, e.g. documentation etc.
	Comunicações / problemas, mas acontece em situações reais.	Communications / problems but happens in real situations.
	Sala: Fácil de tropeçar (Perigos/obestáculos e barreiras)	Room: Many tripping hazards.
	OPERAÇÕES	**OPERATIONS**
	Problema de vias de acesso na costa perto do Namibe. Podia ser necessário o uso de barcos	Coastal access problem near Namibe. It might be necessary to use boats.
	Base da marina de Tombwa / barcos rápidos (interceptor)	Tombwa Marina Base / Fast Boats (Interceptor)
	LOGÍSTICA	**LOGISTICS**
	Ligeiro atraso / quantidades solicitadas.	Slight delays / Quantities requested
	Operações deviam estudar mais profundamente o problema para definir números de recursos.	Operations section should study the problem more to define resource numbers.

	PORTUGUÊS	ENGLISH
	Estoques de equipamentos a serem estabelecidos ao longo da costa.	Stockpiles of equipment to be established along the coast
	FINANÇAS	**FINANCE**
	Falta de comunicação	Lack of communication
	Quantidades?	Quantities?
	Conseguiram começar registro	Were able to start a register
	Linha de processo dentro do centro. Melhor entendimento de tarefas de cada secção.	Process line within the centre. Need a better understanding of tasks in each section.

Taking into consideration the above and discussions with participants during the debriefing sessions, the positive points and those that may need improvement according to what the control team presented during the exercise are summarized as follow:

ENGLISH

POSITIVES

- **Format of activity** including 2-days training before running the exercise allowed refreshing knowledge of participants on key elements of a national system (National plan, organisation for the management of oil spill incidents), oil spill response strategies, compensation aspects and cooperation framework;

- **Training Session:** Participants stated that:
  - Conference room equipment for Training Workshop (MIREMPET room) was suitable (projectors, flip chart, white board, etc.), including for coffee breaks
  - The fact that the presentations in the training session benefited from the presence of 3 facilitators, making the session more dynamic;

- **Exercise**: It was the first bilateral exercise to test cooperation mechanisms in case of a transboundary spill. The activity raised awareness of the risk of transboundary spills in the region, and on the need for running the same activity with neighbouring countries in the North (DRC, Congo) was identified by Angola;

- **The Emergency Management room** at SONANGOL P&P was overall suitable. It was slightly small for the number of participants and might not be suited in size in case of a real incident. For the present exercise however, the equipment in the room was globally suitable (projector, flip chart, white board, etc.) and, in spite of a somewhat downgraded situation due to a recent cyber-attack of the company, Sonangol P&P made all efforts to support the exercise (IT team mobilised, printing organised, etc.)

- It was the first time that the **Incident Commander** was playing this role, with full mobilisation of the sections of the National Incident Command. He was instrumental in organising the sections, encouraging meetings between the sections. Regular timeouts were organised as well as regular contacts with his Namibian counterpart.

- The **Planning, Operations and Logistics** sections worked together, and they were able to set up Incident Action Plans (IAPs) for offshore and onshore response. (Strategy defined, resources needed identified, transportation of resources worked out, staging areas identified / Moçamedes for aerial dispersion, Tombwa for shoreline response equipment and personnel);

- The **Finance** section was able to start a register of operations undertaken, and costs involved; and

- **Cooperation between government and industry:** All sections were very active and although not mentioned in the debriefing section, the involvement of ACEPA members in the Planning and Operations sections, thanks for their understanding and knowledge of resources available in the industry (sensitivity maps, available ships, dedicated equipment, stocks of dispersant, etc.), allowed mounting operations rapidly, with the support and knowledge of government organisations (e.g. customs and immigration issues, availability of military cargo planes for transportation of the resources, facilitation of transfer of equipment from SONILS Logistics base to the airport, etc.). This link is crucial in case of a real incident, to avoid undue delays in the mobilisation of resources (equipment, personnel and materials).

POINTS THAT COULD BE IMPROVED

- **Incident Command Room.**
  - The Emergency Management room of Sonangol Room, although suitable for SONANGOL's own use, would be limited for a national Incident Command room.
  - Furthermore, a lot of communication problems were experienced at the start of the exercise, due to recent cyberattack which had led to increase access security. Initially there was no IT. Sonangol P&P IT team was mobilised and was required to work around security of access;
  - There should be computers available in the room, with access to Internet / at least one computer for each section.

- As in many exercises, the **lack of communications** was mentioned by various participants.
  - The lack of physical communications (phone lines not active, IT access not possible, etc.) were consequences of the cyber-attack experienced by Sonangol P&P. As mentioned by some participants, this kind of communications breakdown happens also in real situations;
  - Communications within the National Incident Command team were difficult at the start of the exercise: as it is often the case, sections tend to work on their own and rely on timeouts to obtain information, ask questions and attempt to resolve issues. This was corrected by the Incident Commander and, as the exercise developed, contacts and/or meetings were organised between the various sections (Planning and Operations, sometimes joined by Logistics, Finance liaising closely with Logistics and being proactive with other sections as well, to improve their understanding of the development of the response)

- **Response strategies and tactics**.
  - The main **offshore strategy** was to use dispersant. In the exercise, this was easily decided. In a real situation, the lack of a clear policy for use of dispersant in Angolan waters could delay the response;
  - The **sensitivity maps** were used extensively by Operations and Planning, to define the overall strategy, in particular onshore. The full sensitivity mapping project (including the

Geographical Information System) is available but MIREMPET and MINAMB should take ownership, so that the system is kept updated and available at all times;
  - Although the strategies and tactics were worked out by the relevant sections, there is a lack of knowledge of what kind of equipment is available in the country and where equipment stockpiles are located (Lobito, Angoflex base, etc.);
  - Access to the coastline by land is likely to be difficult in the area that was threatened by the spill. Access by sea might be necessary. Boats suitable for this type of operation need to be identified;

- **Need for more practical exercises for** members of the National Incident Command team:
  - National exercises should be organised more often to be more familiar with the provisions of the national contingency plan, including roles and tasks members are expected to perform;
  - Training should be provided on oil spill response, procedures, and documentation available to facilitate the management of the response;

PORTUGUÊS

PONTOS POSITIVOS

- O formato da atividade, incluindo treinamento de 2 dias antes da execução do exercício, permitiu atualizar o conhecimento dos participantes sobre os principais elementos de um sistema nacional (plano nacional, organização para gerenciamento de incidentes de derrames de hidrocarbonetos, estratégias de resposta a derrames de hidrocarbonetos, aspectos de compensação e quadro de cooperação;

- Sessão de treinamento: Os participantes declararam que:
  - O equipamento da sala de conferências para o Workshop de Treinamento (sala MIREMPET) era adequado (projetores, "flip chart", "white board", etc.), inclusive para "coffee breaks"
  - O facto de as apresentações na sessão de treinamento terem sido feitas por 3 facilitadores, tornando a sessão mais dinâmica;

- Exercício: foi o primeiro exercício bilateral a testar mecanismos de cooperação em caso de derrame transfronteiriço. A actividade aumentou a conscientização sobre o risco de derrames transfronteiriços na região e a necessidade de realizar a mesma actividade com os países vizinhos do Norte (RDC, Congo) foi identificada por Angola;

- A sala de Gestão de Emergências na SONANGOL P&P era de forma geral adequada. Era um pouco pequena para o número de participantes e o tamanho poderia não ser adequado no caso de um incidente real. No entanto, para o exercício atual, o equipamento na sala era adequado globalmente (projetor, flip chart, quadro branco etc.) e, apesar de uma situação um pouco rebaixada devido a um ataque cibernético recente da empresa, a Sonangol P&P fez tudo esforços para apoiar o exercício (equipe informática mobilizada, impressão de documentos organizada, etc.)

- Foi a primeira vez que o comandante de incidentes estava desempenhando esse papel, com total mobilização das seções do comando nacional de incidentes. Ele foi fundamental na organização das seções, incentivando reuniões entre as seções. Foram realizadas reuniões de coordenação ("timeout") regularmente, bem como contatos regulares com o seu homólogo da Namíbia.

- As seções Planeamento, Operações e Logística trabalharam juntas e conseguiram estabelecer Planos de Acção do Incidente (IAPs) para resposta tanto "offshore" como "onshore" (Estratégia definida, recursos necessários identificados, transporte dos recursos elaborados, áreas de preparação identificadas / Moçamedes para dispersão aérea, Tombwa para equipamento de resposta da costa e pessoal);

- A seção Finanças conseguiu iniciar o registro das operações realizadas e dos custos envolvidos; e

- Cooperação entre governo e indústria: todas as sessões foram muito activas e, embora não mencionadas na sessão cção de "debriefing", o envolvimento dos membros da ACEPA nas secções de Planeamento e Operações, graças à compreensão e conhecimento dos recursos disponíveis na indústria petrolífera (mapas de sensibilidade, navios disponíveis, equipamentos dedicados, estoques de dispersantes, etc.), permitiram estabelecer operações rapidamente, com o apoio e o conhecimento de organizações governamentais (por exemplo, questões de alfandêga e de imigração, disponibilidade de aviões militares de carga para transporte de recursos, facilitação da transferência de equipamentos da base logística SONILS para o aeroporto, etc.). Esse vínculo é crucial no caso de um incidente real, para evitar atrasos indevidos na mobilização de recursos (equipamentos, pessoal e materiais).

PONTOS QUE PODERÃO SER MELHORADOS

- ***Sala de comando de incidentes.***
  - *A sala de Gestão de Emergências da Sonangol P&P, embora adequada para uso próprio da SONANGOL, seria limitada para uma sala nacional de Comando de Incidentes.*
  - *Além disso, muitos problemas de comunicação ocorreram no início do exercício, devido ao recente ataque cibernético que levou ao aumento da segurança do acesso. A equipe de Informática da Sonangol P&P foi mobilizada e solicitada a solucionar a segurança do acesso;*
  - *Deve haver computadores disponíveis na sala, com acesso à Internet / pelo menos um computador para cada seção.*

- ***Como éo caso em muitos exercícios, a falta de comunicação foi mencionada por vários participantes.***
  - *A falta de comunicação física (linhas telefônicas inativas, acesso à Informática impossível etc.) foram consequências do cibe ataque sofrido pela Sonangol P&P. Como mencionado por alguns participantes, esse tipo de falha de comunicação ocorre também em situações reais;*
  - *As comunicações dentro da equipe do Comando Nacional de Incidentes eram difíceis no início do exercício: como geralmente acontece, as seções tendem a funcionar por conta própria e dependem de reuniões de coordenação (timeouts) para obter informações, fazer perguntas e tentar resolver problemas. Isso foi corrigido pelo Comandante do Incidente e, conforme o exercício foi desenvolvido, foram organizados contatos e / ou reuniões entre as várias secções (Planeamento e Operações, às vezes acompanhadas pela Logística, Finanças, estreitando contato com a Logística e sendo proativo com outras seções, para melhorar sua compreensão do desenvolvimento da resposta)*

- ***Estratégias e táticas de resposta.***
  - *A principal estratégia de resposta no alto mar ("offshore") foi usar dispersante. No exercício, isso foi facilmente decidido. Numa situação real, a falta de uma política clara para o uso de dispersante nas águas angolanas poderia atrasar a resposta;*
  - *Os mapas de sensibilidade foram usados extensivamente pelas Operações e Planeamento, para definir a estratégia de resposta geral, em particular em terra. O projeto de mapeamento de sensibilidade completo (incluindo o Sistema de Informações Geográficas) está disponível, mas o MIREMPET e o MINAMB devem assumir a propriedade, para que o sistema seja mantido atualizado e disponível o tempo todo;*
  - *Embora as estratégias e tácticas tenham sido elaboradas pelas secções relevantes, há um desconhecimento de que tipo de equipamento está disponível no país e onde estão localizados os estoques de equipamentos (Lobito, base Angoflex, etc.);*
  - *O acesso à costa por terra provavelmente será difícil na área que foi ameaçada pelo derramamento. O acesso por mar pode ser necessário. Barcos adequados para esse tipo de operação precisam ser identificados;*

- ***Necessidade de mais exercícios práticos*** *para os membros da equipe do Comando Nacional de Incidentes:*
  - *Exercícios nacionais devem ser organizados com mais frequência para familiarizar-se com as disposições do plano nacional de contingência, incluindo papéis e tarefas que os membros devem desempenhar;*
  - *Deve ser fornecido treinamento sobre a resposta a derramamentos de óleo, procedimentos e documentação disponíveis para facilitar a gestão da resposta;*

6.6 Exercise evaluation

Based on the objectives set-out for this exercise the expected outcomes were evaluated by the control team using the following colour coding system:

	Well addressed
	Satisfactory
	Unsatisfactory
	Not addressed
	Not tested

Coordination between Angola and Namibia		
• Incident coordination – Structure / organisation – Control and command – Terminology – Language		• *Coordination meetings set-up by Control Teams in Namibia and Angola;* • *Cooperation language in English for contacts between Angola Incident Commander and Namibia GI WACAF Focal Point;* • *Incident Commander from Namibia delegated communication with Angola to Mr Pinehas Auene (role understood by Angola to represent the IC);* • *In Angola, communications with Namibia were done through the National Incident Commander;* • *Organisation/structure of management, although individuals not all trained, understood in Angola Incident Command Centre (based on IMS);* • *No secondary channels of communications between IMT sections (operational) of both countries/ only formal / high level communication between focal points)*
• Development of a response strategy – at sea – on air – shoreline		• *At sea response agreed between both countries (dispersant spraying– aerial and from ships) initiated in Namibian waters and staged from Angola. Supervised by Angola (in coordination with Angolan industry) with support of Namibia for logistics. The analysis of the incident led to conclude that there was a threat to Angolan coastal area and therefore Angola chose to be proactive in order to prevent impact of its sensitive shorelines.* • *IAPs developed separately on day 2 and not discussed between technical teams - Role of Namibia mainly limited to shoreline response* • *Little/no coordination regarding shoreline response strategy. Understandable as each country focused at their own sensitive areas and prepared for response with own resources.*
• Management of response resources		• *Respective roles of Namibia / Angola was finally agreed (offshore operations relinquished to Angola with support and facilitation of administrative procedures of Namibia in Namibian waters; Shoreline : each country in charge of their respective territory)* • *Namibia initiated discussion for sharing storage of wastes in old mine sites*
• Funding of oil spill response operations and cost recovery		• *Limitation of liability not discussed.* • *Finance section in Angola initiated a register for cost tracking of resources and worked closely with Logistics section to keep updated on resources mobilised and deployed.* ***Note**: resources engaged in Angola included government and industry resources*
• Crisis Management (High level management / decision making)		*NOT TESTED but inputs from high level management prepared (i.e. request preparation of a press release)*

Communication links between Angola and Namibia	
• Notification / Alerting of neighbouring country	• *Angola notified orally but with delays due to initial communications problem;* • *No clear official procedure for alert and notification between the two countries.*
• Sharing of information	• *Information sharing limited to emails / phone calls between Angola Incident Commander and Namibia GI WACAF Focal point* • *GIS information not shared: each country prepared for their own coastal protection. Sharing could have been needed if Namibia didn't allow dispersants to be used in Namibian waters, thus creating a risk to Angolan sensitive resources.* • *For information sharing, a joint file depository could be set up in order to exchange files too large to be emailed.* • *No accountability of shared information*
• Provisions of NOSCPs	• *No contact details provided in Angola or Namibia NOSCP* • *No alert and notification procedures in the NOSCP* • *Personnel to participate in National Incident Command of Angola not designated / thus no duty system in place, with contact details of individuals / entities to contact.*
• Means of communication	• *Overall communication problem encountered in Angola due to the use of SONANGOL P&P facility, which was in downgraded state at time of exercise, due to a recent cyber-attack on the company;* • *Formal communication channels limited to emails and phone calls between Angola IC and Namibian Focal Point;* • *(Informal) WhatsApp used between Angola Incident Commander (M. Xavier) and Namibia GI WACAF Focal Point (P. Auene);* • *No technical communication between Operations sections;* • *Direct lines not available (communications problems on the Angola side);* • *No liaison officer nominated to attend in the IMT of other country.*
Assistance mechanisms	
• International cooperation mechanisms (IMO/OSRL/others)	• *IMO Not contacted* • *OSRL Contacted by ship agent*
• Regional cooperation mechanisms : – ABC Emergency Protocol – Regional Contingency Plan	• *Abidjan Convention not contacted.* • *POLREP system provided in regional contingency plan not used.*
• Sub Regional cooperation mechanisms : Test role of Benguela Current Convention (BCC)	• *NOT TESTED: BCC contingency plan not operational (as presented by BCC delegate during the training session)*
• Customs and immigration – Visa for external assistance – Equipment clearance	• *Customs procedure for authorisation to fly an aircraft in Namibian airspace tested and obtained.*
• Assistance from South Africa	• *Delegate from South Africa (SAMSA) present in Namibia were not consulted despite being present in the room* • *Presence of delegate from South Africa planned to be in Luanda Incident Command as observers was cancelled at last minute.*
National response system	
• Command and control	• *Participants not all familiar with principles of IMS;*

– Incident Management System – Structure / organisation – Accountability – Leadership – Communication		• *Guidance by the Incident Commander and the presence of industry in the Planning and Operations sections facilitated getting organized;* • *All sections were manned with personnel relevant to the expected roles and able to play their role;* • *IMS colour coded vests were provided;* • *Lack of communications between sections initially, but this was corrected, and contacts and meetings later took place regularly (Planning and Operations, sometimes joined by Logistics – Finance with Logistics and sometimes with other sections);* • *Organization chart to be prepared as early as possible with team members / roles / contact details.*
• Development of an Incident Action Plan (IAP) – Methodology – definition of response objectives – response strategies and tactics – tactical deployment		• *Although not in a formal way, IAP was developed in response to representative of shipowner on Day 1 and updated on Day 2;* • *IAP was provided by Operations section, after coordination meetings with Planning and Logistics;* • *It included the Strategies for response Offshore (dispersant application by aircraft and ships) and Onshore including identification of sites to be protected in priority, with identification of resources being mobilised, logistical aspects (e.g. customs and immigration issues for external resources, transportation of resources, identification of staging areas, etc.)*
• Common Operating Procedure – Reporting procedure – GIS data management – record keeping – Management of information		• *No recording / archiving of actions/ information* • *No incidents log (usually 1 personnel from Planning section should be designated)* • *GIS data provided (kml files) not used to follow progress of situation and mapping of resources* • *No system in place for information management* • *No accountability*

Response strategy, tactics and resources

• Offshore response operations – Technical knowledge – Development of response strategies/techniques – Resources management		• *In the exercise, ITOPF in coordination with Shipowner agent and IOPC Funds proposed the offshore response strategy (with priority to dispersant application);* • *For the duration of the exercise, the oil remained in Namibian waters and shipowner agent and ITOPF provided reports of their **aerial surveillance** missions along the exercise. For Day 1 and Day 2, this was not needed for Angola;* • *Although there is a lack of clarity regarding dispersant spraying policy (No official Angolan policy), it was clearly identified that it was needed in order to avoid / limit the impact of oil to Angolan waters.* *Note: Discussions between the 2 countries led to Namibia authorising the use of dispersant in their waters, in order to minimize impact to Angola;* • *The Planning, Operations and Logistics sections of the Angolan National Incident Command demonstrated a good understanding. This was to a certain degree aided by the presence of industry, as well as discussions with the ITOPF representative.*
• Shoreline response operations – Technical knowledge – Development of response strategies/techniques – Resources management		• *Sensitivity maps were used to identify priority sites for protection and areas where clean-up would be organised;* • *The Planning section analysed the maps and proposed a main staging area for onshore response equipment to be set up in Tombwa;* • *Coordination with Operations and Logistics sections led to defining the onshore section of the IAP, which included survey of the coastline by Environmental experts and technicians for the industry, mobilisation of response equipment from industry stockpiles in Luanda, transportation by aircraft form Angolan Air Force, mobilisation of manpower from government entities, concentrating the response resources in a staging area in Tombwa* • *Possible difficulties of access to the shoreline by land was identified and discussions were initiated on possible boats to be used for transporting manpower and equipment to the affected areas;*
• Response equipment (at sea / shoreline) – List of available resources – Support logistics		• *There is no national stockpile in Angola. Equipment and material needed for the response was identified from the existing list of equipment available through ACEPA and therefore came from the industry stockpiles in Luanda (SONILS Logistics base).* • *The logistics needed was defined jointly within the Operations and Logistics section (e.g. an aircraft from the Angolan Air Force was mobilized to transport dispersant and equipment from Luanda to Moçamedes - Namibe).*
• Crisis Management Room(s) – Location – Space – Access – equipment		• *There is no Incident Management Room pre-identified for the National Incident Command in Angola;* • *The installations of Sonangol P&P were used;* • *There is a need for a National Incident Command room to be identified, to be officially designated as such and to be pre-equipped.*

6.7 Avaliação do exercício

Coordenação entre Angola e Namíbia		
• *Coordenação de incidentes* – *Estrutura / organização* – *Controlo e comando* – *Terminologia* – *Língua*		• *Reuniões de coordenação organizadas pelas equipes de controlo na Namíbia e Angola;* • *Idioma de cooperação em inglês para contactos entre o Comandante do Incidente de Angola e o Ponto Focal GI WACAF da Namíbia;* • *O Comandante do Incidente da Namíbia delegou a comunicação com Angola ao Sr. Pinehas Auene (função que Angola entendi como representante do Comandante de Incidente);* • *Em Angola, as comunicações com a Namíbia foram feitas através do Comandante Nacional de Incidentes;* • *Organização / estrutura de gestão, apesar de nem todos os indivíduos serem treinados, compreendidos no Centro de Comando de Incidentes de Angola (baseado no IMS);* • *Não há canais secundários de comunicação entre as seções IMT (operacionais) dos dois países / apenas comunicação formal / de alto nível entre os pontos focais)*
• Desenvolvimento de uma estratégia de resposta ○ no mar ○ no ar ○ linha costeira		• *Resposta no mar acordada entre os dois países (aplicação de dispersante - aérea e de navios) iniciada nas águas da Namíbia e encerrada em Angola. Supervisionado por Angola (em coordenação com a indústria angolana) com apoio da Namíbia para logística. A análise do incidente levou a concluir que havia uma ameaça à área costeira angolana e, portanto, Angola optou por ser proativa, a fim de evitar o impacto de suas linhas costeiras sensíveis.* • *IAPs desenvolvidos separadamente no dia 2 e não discutidos entre equipes técnicas - papel da Namíbia limitado principalmente à resposta da costa* • *Pouca / nenhuma coordenação em relação à estratégia de resposta da costa. Compreensível, pois cada país se concentrou em suas próprias áreas sensíveis e preparado para responder com recursos próprios.*
• Gestão de recursos de resposta		• *Os papéis respectivos da Namíbia / Angola foram finalmente acordados (operações offshore cedidas a Angola com apoio e facilitação de procedimentos administrativos da Namíbia nas águas da Namíbia; Litoral: cada país responsável por seu respectivo território)* • *A Namíbia iniciou uma discussão para compartilhar o armazenamento de resíduos em minas antigas*
• Financiamento de operações de resposta a derramamentos de óleo e recuperação de custos		• *Limitação de responsabilidade não discutida.* • *A secção de Finanças em Angola iniciou um registro para rastreamento de custos de recursos e trabalhou em estreita colaboração com a secção de Logística para manter-se atualizado sobre os recursos mobilizados e implantados.* *Nota: os recursos envolvidos em Angola incluíam recursos governamentais e da indústria*
• Gestão de Crises (Gestão de alta nível / tomada de decisão)		*NÃO TESTADO, mas entradas da gestão de alta nível preparadas (ou seja, solicitou-se a preparação de um comunicado de imprensa)*
Linhas de comunicação entre Angola e Namíbia		
• Notificação / alerta do país vizinho		• *Angola notificada oralmente, mas com atrasos devido a problemas iniciais de comunicação;* • *Nenhum procedimento oficial claro de alerta e notificação entre os dois países.*

• Compartilhamento de informações	• *Partilha de informação limitada a e-mails / telefonemas entre o Comandante do Incidente de Angola e o ponto focal da GI WACAF da Namíbia* • *Informações de Sistemas de Informação Geográfica (SIG) não compartilhadas: cada país preparou para sua própria proteção costeira. O compartilhamento poderia ser necessário se a Namíbia não permitisse o uso de dispersantes nas águas da Namíbia, criando assim um risco para os recursos sensíveis de Angola.* • *Para o compartilhamento de informações, um depósito conjunto de arquivos podia ser configurado para trocar arquivos grandes demais para serem enviados por e-mail.* • *Nenhuma responsabilidade por informações compartilhadas*
• Disposições dos Planos Nacionais de Contingência	• *Nenhum dado de contato nos PNCs de Angola ou Namíbia* • *Nenhum procedimento de alerta e notificação nos PNCs* • *Pessoal para participar do Comando Nacional de Incidentes de Angola não designado / portanto, não existe um sistema de serviço, com detalhes de contato de indivíduos / entidades a serem contatados.*
• Meios de comunicação	• *Problema geral de comunicação encontrado em Angola devido ao uso das instalações da SONANGOL P&P, que estavam em estado rebaixado no momento do exercício, devido a um ataque cibernético recente à empresa;* • *Canais formais de comunicação limitados a e-mails e telefonemas entre o Comandante Nacional de Incidentes de Angola e o Ponto Focal da Namíbia;* • *WhatsApp (informal) usado entre o Comandante Nacional de Incidentes de Angola (M. Xavier) e o Ponto Focal da WI da GI da Namíbia (P. Auene);* • *Nenhuma comunicação técnica entre as seções de Operações;* • *Linhas direitas indisponíveis (problemas de comunicação no lado de Angola);* • *Nenhum oficial de ligação indicado para participar do IMT de outro país.*
Mecanismos de assistência	
• Mecanismos de cooperação internacional (IMO / OSRL / outros)	• *IMO não foi contatada* • *• OSRL contactada pelo agente do navio*
• Mecanismos de cooperação regional: – Protocolo de Emergência ABC – Plano de Contingência Regional	• *Convenção de Abidjan não contatada.* • *• O sistema POLREP fornecido no plano de contingência regional não é utilizado.*
• Mecanismos de cooperação sub-regional: Teste do papel da Convenção Atual de Benguela (BCC)	• *NÃO TESTADO: O plano de contingência da BCC não está operacional (conforme apresentado pelo delegado da BCC durante a sessão de treinamento)*
• Alfândega e imigração – Visto para assistência externa – Liberação de equipamentos	• *Procedimento aduaneiro para autorização de pilotar uma aeronave no espaço aéreo da Namíbia testado e obtido.*
• Assistência da África do Sul	• *Delegado da África do Sul (SAMSA) presente na Namíbia não foi consultado, apesar de estar presente na sala* • *Presença de delegado da África do Sul planejada para estar no Comando de Incidentes de Luanda, pois os observadores foram cancelados no último minuto.*

Sistema nacional de resposta

• Ativação do PNC em Angola – Acções iniciais e avaliação de derramamentos no mar – Procedimentos de alerta e notificação – Mobilização de pessoal	• *Alerta foi recebido da Namíbia, com algum atraso, devido aos problemas de comunicação iniciais;* • *Todo o pessoal pré-mobilizado para a Sala de Comando de Incidentes de Angola para fins do exercício (alerta e mobilização do pessoal NÃO testado);* • *Uso dos mapas projetados do Google Earth para avaliação inicial do incidente;* • *Para além das informações iniciais fornecidas, a magnitude do derrame e a ameaça potencial às águas angolanas foram identificadas rapidamente;*
• Comando e controle – Sistema de Gestão de Incidentes – Estrutura / organização – Prestação de contas – Liderança – Comunicação	• *Participantes nem todos familiarizados com os princípios do IMS;* • *A orientação do Comandante do Incidente e a presença da indústria nas seções de Planeamento e Operações facilitaram a organização;* • *Todas as seções foram equipadas com pessoal relevante para as funções esperadas e capazes de desempenhar sua função;* • *Coletes com IMS cores foram fornecidos;* • *Falta de comunicação entre as seções inicialmente, mas isso foi corrigido, e contatos e reuniões posteriormente ocorreram regularmente (Planeamento e Operações, algumas vezes acompanhadas por Logística - Finanças com Logística e outras vezes com outras seções);* • *Organograma a ser preparado o mais cedo possível com os membros da equipe / funções / detalhes de contato.*
• Desenvolvimento de um plano de acção para incidentes (IAP) – Metodologia – Definição dos objetivos de resposta – Estratégias e táticas de resposta – Implantação tática	• *Embora não formal, o Plano de Ação do Incidente (IAP) foi desenvolvido em resposta ao representante do armador no dia 1 e atualizado no dia 2;* • *O IAP foi fornecido pela seção Operações, após reuniões de coordenação com Planeamento e Logística;* • *Incluiu as estratégias de resposta Offshore (aplicação de dispersantes por aeronaves e navios) e Onshore, incluindo a identificação de locais a serem protegidos prioritariamente, com a mobilização de recursos, aspectos logísticos (por exemplo, questões alfandegárias e de imigração para recursos externos, transporte de recursos) , identificação de áreas de preparação etc.)*
• Procedimento operacional comum – Procedimento de relatório – Gestão de dados GIS – Manutenção de registros – Gerenciamento de informações	• *Nenhuma gravação / arquivamento de ações / informações* • *Nenhum registro do incidente (geralmente 1 pessoal da seção Planeamento deve ser designado)* • *Dados SIG fornecidos (arquivos kml) não usados para acompanhar entendimento do progresso da situação e o mapeamento de recursos* • *Não existe um sistema para gerenciamento de informações* • *Nenhuma responsabilidade*

Estratégia de resposta, táticas e recursos

• Operações de resposta offshore – Conhecimento técnico – Desenvolvimento de estratégias / técnicas de resposta – Gestao de recursos		• *No exercício, a ITOPF em coordenação com o agente do armador e os fundos da IOPC propuseram a estratégia de resposta offshore (com prioridade à aplicação de dispersantes);* • *Durante a duração do exercício, o óleo permaneceu nas águas da Namíbia e o agente do armador e a ITOPF forneceram relatórios de suas missões de vigilância aérea ao longo do exercício. Nos dias 1 e 2, isso não foi necessário para Angola;* • *Embora exista uma falta de clareza relativamente à política de aplicação de dispersantes (Nenhuma política angolana oficial), foi claramente identificado que era necessário para evitar / limitar o impacto do petróleo nas águas angolanas.* *Nota: As discussões entre os 2 países levaram a Namíbia a autorizar o uso de dispersante em suas águas, a fim de minimizar o impacto em Angola;* • *As secções de Planeamento, Operações e Logística do Comando Nacional de Incidentes de Angola demonstraram uma boa compreensão. Até certo ponto, isso foi auxiliado pela presença da indústria, bem como por discussões com o representante da ITOPF.*
• Operações de resposta da linha costeira – Conhecimento técnico – Desenvolvimento de estratégias / técnicas de resposta – Gestão de recursos		• *Mapas de sensibilidade foram usados para identificar locais prioritários para proteção e áreas onde a limpeza seria organizada;* • *A seção Planeamento analisou os mapas e propôs uma área principal de concentração e preparação do equipamento de resposta em terra a ser instalado em Tombwa;* • *A coordenação com as secções de Operações e Logística levou à definição da parte terrestre do IAP, que incluiu o levantamento da costa por técnicos ambientais e especialistas da indústria, mobilização de equipamentos de resposta a partir de estoques da indústria em Luanda, transporte por aeronaves da Força Aérea Angolana, mobilização de mão de obra de entidades governamentais, concentrando os recursos de resposta em uma área de preparação em Tombwa;* • *Possíveis dificuldades de acesso à costa por terra foram identificadas e foram iniciadas discussões sobre possíveis barcos a serem usados no transporte de mão de obra e equipamentos para as áreas afetadas.*
• Equipamento de resposta (no mar / na costa) – Lista de recursos disponíveis – Logística de suporte		• *Não existe estoque nacional em Angola. O equipamento e o material necessários para a resposta foram identificados na lista existente de equipamentos disponíveis na ACEPA e, portanto, provêm dos estoques da indústria em Luanda (base logística da SONILS).* • *A logística necessária foi definida em conjunto nas secções de Operações e Logística (por exemplo, uma aeronave da Força Aérea Angolana foi mobilizada para transportar dispersantes e equipamentos de Luanda para Moçamedes - Namibe).*
• Sala (s) de gestão de crises – Localização – Espaço – Acesso – Equipamento		• *Não existe uma sala de gestão de incidentes pré-identificada para o Comando Nacional de Incidentes em Angola;* • *Foram utilizadas as instalações da Sonangol P&P;* • *É necessário que uma sala do Comando Nacional de Incidentes seja identificada, oficialmente designada como tal e pré-equipada.*

7 Recommendations

The following recommendations are based on the evaluation of the exercise (above) and discussions with participants during the workshop and exercise.

INTERNATIONAL COOPERATION

- **Development of an alert and notification procedure** for transboundary spills in the National oil spill contingency plan
    - Use of POLREP system (i.e. POLREP system in regional contingency plan)
    - Include mobilisation of IMO
- **Specify interface between national response organisations**
    - Who talks to whom? How? When?
- **Ensure emergency contacts numbers are up to date** (and readily available)
- **Explore what could be the role of BCC** for the improvement of cooperation:
    - Role during the preparedness : development bilateral agreement, organisation of transboundary exercises, routine check emergency contacts, regional oil spill equipment database, regional spill specialist database, etc.
    - Role during response operations: mobilisation of international expertise, technical support for protection of sensitive environmental and biological resources
- **Homogenization of response policies** in the countries of the sub-region, i.e.:
    - National policies for use of dispersants;
- **National organization for the management of oil spill response**
    - Base organization on the Incident Management System (IMS), in order to ensure similar response structures and use of common terminology;
- **Develop a framework procedure for assistance mechanisms** in the sub-region:
    - List of individuals empowered at National level to request assistance and/or accept to render assistance (designation of call-out authorities);
    - Develop template to be used as mobilisation request forms;
    - Ensure that emergency customs and immigration procedures are in place;
    - Clarify cost-recovery rules for Assisting and Requesting Parties;
    - Clarify rules for management of external response resources on the scene of operations by Requesting Party;
    - Rules for demobilisation and returning of resources to Assisting Party.

NATIONAL RESPONSE FRAMEWORK - ANGOLA

The revision of the National Oil Spill Plan (PNC - *Plano Nacional de Contingência Contra Derrames de Petróleo no Mar de Angola***)** is under way. The process is run jointly by the Ministry of Mineral

Resources and Petroleum (Ministério dos Recursos Minerais e Petróleos) and the Ministry of Environment (Ministério do Ambiente).

As part of the revision, the following should be addressed:

DEVELOP A NATIONAL POLICY FOR USE OF DISPERSANT IN ANGOLAN WATERS

- Develop a **national policy for use of dispersant in Angolan waters, within the revision of the PNC** that should include:
    - Conditions of use in Angolan waters
        - Geographical limits for use / based on depth, size of incident and volume of spill;
    - Conditions of use in subsea injection, directly at the well head, in case of a blowout;
    - Revision of the list of approved products
        - based on laboratory tests, and favouring the use of "green" products, including the registration and certification of products;
    - Technical Guidelines for the application of dispersants.
- Update the National response policy of Angola to reflect the newly developed dispersant use policy, etc.

UPDATE SENSITIVITY MAPS

- An extensive work was done for the entire coastline of Angola. It proved valuable during the exercise and would be essential in case of a real incident.
- The progressive transfer from Operators (through ACEPA) to National Authorities for the full update and the transfer of competencies and knowledge should be accelerated, the geographic database is not yet managed by Angolan national authorities and the maps have therefore not been updated since 2016.
- It appears necessary:
    - To designate the leading agency (it could be MIREMPET or MINAMB);
    - To define a budget and allocate to the leading agency for
        - The update of the existing system;
        - Developing internal competencies for personnel in charge in the designated leading agency;
        - Acquiring tools (GIS system, etc.);
        - Acquiring and validating data for the update and the maintenance of the system.

DEVELOP A **SHORELINE RESPONSE STRATEGY**

- Clarify the interaction between National and Local authorities of Angola:
    - Examine the need for provincial plans, integrated within the PNC
- The overall strategy should be based on existing documents developed as a part of the sensitivity mapping documents (strategic/tactical and site protection plans);
- Identify key logistics challenges:
    - Areas with road access / areas requiring access by sea / areas with restricted access
    - Potential staging areas and waste storage areas are identified in the operational tactical maps. However, their validity should be verified through the organisation of

shoreline exercises, such as the ones done on a regular basis by the oil industry (e.g. Mussulo, Barra do Dande, etc.)
    - Locations of resources (government and private) which might be needed for the mobilisation and deployment of response resources;
    - Airports and airstrips: identify characteristics in relation to aircraft take-off/landing possibilities.
- Integration of updated strategies for **waste management** and **oiled wildlife response**

IMPROVE INCIDENT MANAGEMENT PROCEDURES

- **Designate officially the location for the National Incident Command room** and equip the room with all necessary support equipment, such as:
    - telephone lines,
    - computer access and printer(s)
    - Documentation including hard copies of the PNC, sensitivity maps, etc.
- **Alerting procedure:** set up the list and contact details of the members of the National commission and of the Technical Committee, and keep emergency contacts, list of equipment in the country, etc. updated;
- **Define the budget needed** for the implementation and sustaining the running costs of the revised PNC
    - Consider legislation for the establishment of a "Spill Control Fund" for funding of the budget.
- **Consider the establishment of a core response team** composed of trained / competent personnel that would be invited to attend preparedness activities and play key role during real spill incidents.

RESPONSE STRUCTURE AND ORGANIZATION

- Structure the National Incident Command team by updating the key functions of each of the sections, e.g. include Communications section as a Unit in the Logistics section.
- Consider the development of **job tickets** for key functions of the National Incident Command team, i.e.
    - Incident Commander;
    - Operations Section Head;
    - Planning Section Head;
    - Logistics Section Head;
    - Finance Section Head.
- **Ensure a sufficient level of technical competency** of members of the National Incident Command team through targeted training and exercises, and attendance to real spill incidents.
- **Keep track of personnel** that attended preparedness activities and real spill incident with information of their role during these activities;

- **Ensure that key positions in the National Incident Command team** (Incident Commander, Response Coordinator Section's head, etc.) **are allocated to trained and competent personnel** during exercises and real spill incidents.
- **Specify the essential external interfaces** of the OT:
    - Specify the interfaces (national and local) with the Port Authorities, responsible parties (i.e. private sector, maritime transport, oil industry etc.).
    - Clarify interfaces with external assistance (national and international).

PREPAREDNESS: TRAINING, EXERCISES AND RESPONSE RESOURCES

- Plan training for key Members of the National Incident Command team on key aspects of response, i.e.:
    - Principles of Incident Management System (IMS);
    - IMO OPRC Level 2 / Level 3;
    - Aerial surveillance / Shoreline Clean-up Assessment
- Develop a programme of exercise to test specific response aspects including:
    - Notification exercises;
    - Tabletop exercises;
    - Equipment deployment exercises;
    - Incident management exercises.

The following table is an excerpt of the 2005 IPIECA guideline on exercise planning. It gives an overview of the purpose and scope of each of these types of exercises.

	Notification Exercise	Tabletop Exercise	Equipment Deployment Exercise	Incident Management Exercise
Purpose	• demonstrate availability to respond • ascertain travel options • verify communications systems • confirm accuracy of information	• test emergency management knowledge and capability • provide individual and team training • acquaint personnel with roles and responsibilities	• test equipment deployment procedures and strategies • practice individual skills and team interaction • focus on teamwork and organization • test communications	• demonstrate spill response management capabilities • integration of roles of different parties • focus on overall incident management aspects
Coordination	• exercise coordinator	• exercise coordinator • role players • evaluators	• exercise coordinator • technical advisers • evaluators	• exercise coordinator • facilitators, role players • evaluators, controllers
Location	• offices, homes	• office, crisis centre, hotel command post	• simulated response location	• crisis room and single or several response facilities
Personnel	• all team members	• response team members • other parties	• local spill response team • contractors • observers	• local/central response teams • other parties
Duration	• 1–2 hours	• 4–8 hours	• 4–8 hours	• 1–2 days
Objectives	• personnel notified and ready to respond	• response strategies agreed • resources identified • implementation complete	• equipment mobilized and working	• personnel mobilized • response strategy agreed • crisis being managed
Evaluation	• reports on efficiency and speed of communications • recommendations	• reports from facilitators and evaluators • feedback from players • recommendations	• reports of individual and team performances • team member feedback • recommendations	• reports of individual and team performances • team member feedback • external party feedback • recommendations

8 Recomendações

As recomendações a seguir são baseadas na avaliação do exercício (acima) e discussões com os participantes durante o workshop e o exercício.

COOPERAÇÃO INTERNACIONAL

- **Desenvolvimento de um procedimento de alerta e notificação** para derrames transfronteiriços no plano nacional de contingência de derramamentos de óleo
    - Uso do sistema POLREP (ou seja, sistema POLREP no plano de contingência regional)
    - Incluir a mobilização da OMI
- **Especifique a interface entre organizações nacionais de resposta**
    - o Quem fala com quem? Como? Quando?
- **Verifique se os números dos contatos de emergência estão atualizados** (e prontamente disponíveis)
- **Explorar qual poderia ser o papel do CBC** na melhoria da cooperação**:**
    - Papel durante a preparação: acordo bilateral de desenvolvimento, organização de exercícios transfronteiriços, verificação regularmente dos contatos de emergência, banco de dados regional de equipamentos para derrames de hidrocarbonetos, banco de dados regional para especialistas em derrames de hidrocarbonetos etc.
    - Papel durante as operações de resposta: mobilização de expertos internacionais, suporte técnico para proteção de recursos ambientais e biológicos sensíveis
- **Homogeneização das políticas de resposta** nos países da sub-região, ou seja**:**
    - Políticas nacionais para uso de dispersantes;
- **Organização nacional para a gestão da resposta** a derrames de hidrocarbonetos
    - Basear a organização no Sistema de Gestão de Incidentes (IMS), para garantir estruturas de resposta semelhantes e uso de terminologia comum;
- **Desenvolver um quadro de procedimento para mecanismos de assistência** na sub-região:
    - Lista de indivíduos habilitados a nível nacional para solicitar assistência e / ou aceitar prestar assistência (designação de individuais de autoridade validados);
    - Desenvolver modelo para ser usado como formulários de solicitação de mobilização;
    - Garantir a existência de procedimentos de emergência para alfandega e imigração;
    - Esclarecer as regras de recuperação de custos entre as Partes Assistentes e Solicitantes;
    - Esclarecer regras para a gestão de recursos de resposta externos nas operações no sítio pela Parte Requerente;
    - Regras para desmobilização e devolução de recursos à Parte Assistente.

QUADRO NACIONAL DE RESPOSTA - ANGOLA

- Está em curso **a revisão do PNC (Plano Nacional de Contingência contra Derrames de Petróleo no Mar de Angola).** O processo é executado em conjunto pelo Ministério dos Recursos Minerais e Petróleo e pelo Ministério do Ambiente.
- Como parte da revisão, o seguinte deve ser tratado:

DESENVOLVER UMA POLÍTICA NACIONAL DE USO DE DISPERSANTES NAS ÁGUAS ANGOLANAS

- Desenvolver uma política nacional para uso de dispersante nas águas angolanas, dentro da revisão do PNC, que deve incluir:
    - Condições de uso nas águas angolanas
        - Limites geográficos para uso / com base na profundidade, tamanho do incidente e volume do derramamento;
    - Condições de uso em injeção submarina, diretamente na cabeça do poço, em caso de explosão;
    - Revisão da lista de produtos aprovados
        - com base em testes de laboratório e favorecendo o uso de produtos "verdes", incluindo o registro e certificação de produtos;
    - Diretrizes técnicas para aplicação de dispersantes.
- Atualizar a política de resposta nacional de Angola para refletir a política de uso de dispersantes recentemente desenvolvida etc.

MAPAS DE SENSIBILIDADE DE ATUALIZAÇÃO

- Foi realizado um extenso trabalho para toda a costa de Angola. Ele se mostrou valioso durante o exercício e seria essencial em caso de um incidente real.
- A transferência progressiva dos Operadores (através da ACEPA) para as Autoridades Nacionais para a atualização completa e a transferência de competências e conhecimentos deve ser acelerada. O banco de dados geográficos ainda não é gerenciado pelas autoridades nacionais angolanas e, portanto, os mapas não são atualizados desde 2016.
- Parece necessário:
    - Designar a agência líder (poderia ser MIREMPET ou MINAMB);
    - Definir um orçamento e alocar à agência líder para
        - A atualização do sistema existente;
        - Desenvolvimento de competências internas para o pessoal responsável pela agência líder designada;
        - Aquisição de ferramentas (sistema SIG etc.);
        - Adquirir e validar dados para a atualização e manutenção do sistema.

DESENVOLVIMENTO DA ESTRATÉGIA DE RESPOSTA NA COSTA

- Esclarecer a interação entre as autoridades nacionais e locais de Angola:
    - Examinar a necessidade de planos provinciais, integrados no PNC
- A estratégia geral deve basear-se nos documentos existentes desenvolvidos como parte dos documentos de mapeamento de sensibilidade (planos estratégicos / táticos e de proteção do local);

- Identifique os principais desafios logísticos:
    - Áreas com acesso rodoviário / áreas que requerem acesso marítimo / áreas com acesso restrito
    - Áreas potenciais de armazenamento temporário e áreas de armazenamento de resíduos são identificadas nos mapas táticos operacionais. No entanto, sua validade deve ser verificada através da organização de exercícios na costa, como os realizados regularmente pela indústria do petróleo (por exemplo, Mussulo, Barra do Dande etc.)
    - Locais de recursos (governamentais e privados) que podem ser necessários para a mobilização e implantação de recursos de resposta;
    - Aeroportos e pistas de pouso: identifique características em relação às possibilidades de decolagem / pouso de aeronaves.
- Integração de estratégias atualizadas para gerenciamento de resíduos e resposta à fauna silvestre oleada

MELHORAR OS PROCEDIMENTOS DE GESTÃO DE INCIDENTES

- **Designar oficialmente o local da sala de Comando Nacional de Incidentes** e equipar a sala com todo o equipamento de suporte necessário, como:
    - Linhas telefônicas,
    - Acesso ao computador e impressora (s)
    - Documentação, incluindo cópias impressas do PNC, mapas de sensibilidade etc.
- **Procedimento de alerta:** estabeleça a lista e os detalhes de contato dos membros da Comissão Nacional e do Comitê Técnico e mantenha os contatos de emergência, lista de equipamentos no país etc. atualizados;
- **Definir o orçamento necessário** para a implementação e sustentar os custos de operação do PNC revisado
    - Considerar legislação para o estabelecimento de um "Fundo de Controle de Derramamento" para financiamento do orçamento.
- **Considere o estabelecimento de uma equipe de resposta principal** composta por pessoal treinado / competente que seria convidado a participar de atividades de preparação e a desempenhar um papel fundamental durante incidentes reais de derramamento.

ESTRUTURA E ORGANIZAÇÃO DA RESPOSTA

- Estruture a equipe do Comando Nacional de Incidentes, atualizando as principais funções de cada uma das seções, por exemplo inclua a seção Comunicações como uma unidade na seção Logística.
- Considere o desenvolvimento de fichas de descrição de tarefas para as principais funções da equipe do Comando Nacional de Incidentes, ou seja,
    - Comandante de Incidentes;
    - Chefe da seção de operações;
    - Chefe da seção de planejamento;
    - Chefe de Seção de Logística;
    - Chefe da seção de finanças.

- **Garantir um nível suficiente de competência técnica** dos membros da equipe do Comando Nacional de Incidentes por meio de treinamento e exercícios direcionados, e participação em incidentes reais de derramamento.
- Acompanhar **o pessoal que participou** de atividades de preparação e incidentes reais de derrames com informações de seu papel durante essas atividades;
- Assegure-se de que as posições-chave da equipe do Comando Nacional de Incidentes (CNI) (Comandante do Incidente, chefe da seção de coordenadores de resposta etc.) sejam alocadas a pessoal treinado e competente durante exercícios e incidentes reais de derramamento.
- Especifique as interfaces externas essenciais do CNI:
    - Especifique as interfaces (nacionais e locais) com as autoridades portuárias, responsáveis (por exemplo, setor privado, transporte marítimo, indústria de petróleo etc.).
    - Esclarecer interfaces com assistência externa (nacional e internacional).

PREPARAÇÃO: TREINAMENTO, EXERCÍCIOS E RECURSOS DE RESPOSTA

- Planificar o treinamento dos principais membros da equipe do Comando Nacional de Incidentes sobre os principais aspectos da resposta, ou seja:
    - Princípios do sistema de gestão de incidentes (IMS);
    - Cursos OPRC IMO Nível 2 / Nível 3;
    - Vigilância aérea / avaliação da limpeza da linha costeira;
- Desenvolver um programa de exercícios para testar aspectos específicos da resposta, incluindo:
    - Exercícios de notificação;
    - Exercícios de “tabletop”;
    - Exercícios de implantação de equipamentos;
    - Exercícios de gestão de incidentes.

9 Conclusion

This activity has been organised in recognition of the risk of a major marine oil spill in the region with the potential to affect 2 or more countries.

It included 2 phases:

- a 2-day training to refresh the participants on the key elements of the respective National Response Systems, oil spill response strategy, compensation and cooperation mechanisms
- a 2-day tabletop exercise organised in conjunction with Namibia to test the coordination of the response to a major oil spill incident.

The discussions following the presentations and the outcome of the exercise allowed identifying key points for the improvement of response efficiency through the consolidation of the national response system and the implementation of international cooperation mechanisms. Specific recommendations for improvement are presented in section 7 of the present document.

It must be noted that while the development of specific cooperation mechanisms in the form of regional contingency plans or multilateral agreements may help improve response effectiveness in the region, the consolidation of national response systems through an improved organisation, and the implementation of a comprehensive training and exercise programme, should be considered as a priority.

Annex 1: Programme[1]

PROGRAMA

WORKSHOP TRANSFRONTEIRIÇOS
DE RESPOSTA A DERRAMES DE PETRÓLEO
Programa do Workshop

Luanda, Angola
6 – 9 de Agosto 2019

Global Initiative for Western, Central and Southern Africa

Organizado por:
Ministério dos Recursos Minerais e Petróleos

[1] Programme initially proposed for the worshops has been adjusted during the workshop as reflected in section 5 - Training workshop (6th-7th August)

Iniciativa Global para a Africa do Oeste e Central

(GI WACAF)

Instituído em 2006, o Projecto Iniciativa Global para o Projecto da África Ocidental, Central e Austral (GI WACAF) é uma colaboração entre a Organização Marítima Internacional (OMI) e a IPIECA, a associação global para a indústria do petróleo para questões ambientais e sociais, com o intuito de fomentar a capacidade dos países participantes em termos de preparação e resposta face a derrames de hidrocarbonetos no mar.

A missão consiste em fortalecer os sistemas nacionais de prontidão e resposta a derrames de hidrocarbonetos em 22 países da África Ocidental, Central e Austral, de acordo com as disposições da Convenção Internacional sobre Preparação, Resposta e Cooperação para a poluição por petróleo, 1990 (OPRC 90).

Para cumprir sua missão, o projecto do IG WACAF organiza e facilita workshops, seminários e exercícios destinados a divulgar as melhores práticas em todos os aspectos de prontidão e resposta a derrames, tirando partido dos conhecimentos e da experiência de governos, indústria e de outras organizações que trabalham neste sector tão especializado. De modo a preparar e implementar estas actividades, o projecto conta com sua rede de pontos focais em governos e na indústria. A promoção da cooperação entre todas as agências governamentais relevantes, a indústria do petróleo e outras partes interessadas aos níveis nacional, regional e internacional é um dos objectivos principais do projecto durante essas actividades.

A GI WACAF opera e realiza actividades com a contribuição da OMI e de sete empresas petrolíferas associadas à IPIECA, nomeadamente a BP, Chevron, ExxonMobil, Eni, Shell, Total e Woodside.

Informação adicional está disponível no site do projecto

Datas e local

Este evento terá lugar de 6 a 9 de Agosto de 2019 no Ministério dos Recursos Minerais e Petróleos, Luanda.

Objectivos da oficina de formação

Os objectivos do treino e do exercício teórico, definidos pelos países onde o evento terá lugar são:

- Expor os participantes às principais questões relacionadas com incidentes transfronteira de derrames de hidrocarbonetos;
- Testar os canais de comunicação entre Angola e a Namíbia;
- Testar os mecanismos de solicitação de assistência e mobilização de recursos internacionais;
- Testar os planos nacionais dos dois países no caso de um incidente transfronteira envolvendo um derrame de petróleo.

Contacto

Julien Favier, IMO / IPIECA – *Administrador do Projecto GI WACAF*

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Email: julien.favier@ipieca.org

Mr. Manuel Xavier, HSE Director, Ministério dos Recursos Minerais e Petróleos

Email : manuel.x.xavier16@gmail.com

Dia 1 – Terça-feira, 6 de Agosto 2019	
0830 – 0900	**Chegada e inscrição dos participantes**
	Cerimónia de abertura
0900 – 1000	**Notas introdutórias:** *Manuel Xavier (MIREMPET)* **Intervenção da GI WACAF:** *Julien Favier, administrador do Projecto GI WACAF* **Discurso de abertura:** *Sua Ex.ª o Secretário de Estados dos Petróleos*
1000 – 1030	**Pausa para café e fotografia de grupo**
	Introdução ao Workshop de Formação
1100 – 1130	**O Projecto GI WACAF: Progresso e estado actual** *Julien Favier, administrador do Projecto GI WACAF* **Apresentação dos facilitadores** *Julien Favier, GI WACAF; Jean-Yves Huet, OTRA; Duarte Soares, ITOPF* **Apresentação dos participantes** **Visão geral do Workshop de Formação** *Julien Favier, administrador do Projecto GI WACAF*
	Planos de Contingência Contra Derrames de Petróleo
1130 - 1200	**Regulamentação e aspectos institucionais em planos de contingência contra derrames de Petróleo** *Julien Favier, administrador do Projecto GI WACAF* • O OPRC 90 (Convenção Internacional sobre Cooperação, Preparação e Luta contra a Contaminação por Hidrocarbonetos) e o seu enquadramento internacional • Obrigações nacionais nos termos do OPRC 90 • Enquadramento institucional e partilha de responsabilidades Discussão
1200 – 1300	**Almoço**
1300 – 1345	**Panorâmica geral do Plano Nacional de Contingência Contra Derrames de Petróleo** *Manuel Xavier (Mirempet)* • Papeis e responsabilidades dos departamentos e agências governamentais na resposta a derrames de petróleo • O papel da indústria na resposta a derrame de petróleo • Pontos chaves a considerar na estratégia de resposta a derrames de petróleo • Navios, aeronaves e reservas de equipamento • Armazenamento e tratamento de resíduos tóxicos Discussão

1345 – 1400	**O papel da ITOPF na resposta a derrames de petróleo** *Duarte Soares, ITOPF*
1400 – 1430	**Comando e Controlo na resposta a derrames de petróleo** *Duarte Soares, ITOPF* • Principais desafios causados por derrames de petróleo • Papéis e responsabilidades durante as operações de resposta • Organização, dimensionamento e concretização de operações de resposta • Gestão de incidentes e estruturas organizacionais • Requerimentos chave para um controlo efectivo da resposta Discussão
1430 – 1500	**Pausa para café**
1500 – 1600	**Riscos de derrame de hidrocarbonetos em Angola, sensibilidades ambientais e socioeconómicas** *Manuel Xavier (Mirempet)* • Riscos apresentados pelo transporte marítimo (incluindo navios de passagem) • Riscos apresentados pela exploração e produção offshore de hidrocarbonetos • Habitats costeiros sensíveis • Indústria pesqueira e turismo Discussão
1600 – 1630	**Levantamento e cartografia de zonas de sensibilidade ambiental** *Jean-Yves Huet, OTRA e TOTAL ANGOLA* • Plano geral e objectivos da cartografia de zonas de sensibilidade ambiental • Benefícios para a tomada de decisões durante operações de resposta • Exemplos de mapas de sensibilidade ambiental Discussão
1630 – 1700	**Discussão e sumário do primeiro dia** *Julien Favier, GI WACAF (Facilitador)*
	Final do primeiro dia

Dia 2 – Quarta-feira, 7 de Agosto 2019	
	Estratégias de resposta a derrames de petróleo
0900 – 0945	**Resposta a incidentes no mar** *Jean-Yves Huet, OTRA* • Recolha de informação: vigilância aérea • Avaliação da necessidade de resposta no mar • Contenção e recolha de hidrocarbonetos derramados no mar • Aplicação de dispersantes: benefícios e restrições • Estratégias de protecção do litoral • O conceito "NEBA" (análise de benefício ambiental) Discussão
0945 – 1030	**Limpeza do litoral** *Duarte Soares, ITOPF* • Recolha de informação: levantamentos do litoral • Estratégias e fases da limpeza da costa • Técnicas de recolha de petróleo em grandes volumes • Remoção de óleo residual: métodos e pontos de terminação • Problemas gerados por métodos agressivos de limpeza Discussão
1030 – 1100	Pausa para café

1100 – 1130	**Limpeza de animais selvagens contaminados por petróleo**
	Jean-Yves Huet, OTRA
	• Integração de operações de limpeza de animais selvagens no sistema de gestão de incidentes (offshore e onshore)
	  ○ Definição de estratégias
	  ○ Implementação das operações
	• Acesso a aconselhamento e mobilização de organizações especializadas
	• Acesso a recursos faseados de resposta
	Discussão

1130 – 1200	**Gestão de resíduos contaminados (vídeo)** *Duarte Soares, ITOPF* • Problemas associados com a produção de resíduos contaminados • Métodos para a redução de resíduos contaminados durante a limpeza • Tratamento e opções de eliminação de resíduos contaminados Exercício de perguntas e respostas
1200 – 1300	Almoço

	Regimes de compensação
1300 – 1330	**Indemnização por derrames de hidrocarbonetos (Filme)** *Duarte Soares, ITOPF* • Convenções relativas a derrames de petroleiros ("CLC" e "FUND") • O Fundo Suplementar, "STOPIA" and "TOPIA" • A convenção "BUNKERS" • Clubes P&I e o Grupo Internacional • O papel dos fundos "IOPC" • Estudo de caso: HEBEI SPIRIT
1330 – 1400	**Manutenção de registos e formulação de pedidos de indemnização** *Duarte Soares, ITOPF* • Organizações chave e o processo de assentamento de indemnização • Orientação na elaboração e submissão de pedidos de indemnização • Fases e critérios para a avaliação de pedidos de indemnização • Manutenção de registos durante operações de resposta Exercício e discussão
1400 – 1430	**Pausa para café**
	Operações de resposta transfronteiriça
1430 – 1500	**Cooperação internacional na resposta a derrames de petróleo** *Duarte Soares, ITOPF* • Lições aprendidas em 50 anos de resposta a incidentes • Problemas associados a incidentes transfronteiriços • Casos de estudo: TASMAN SPIRIT, PRESTIGE, SANCHI • Exemplos de cooperação regional efectiva Discussão
1500– 1545	**Providências transfronteiriças no âmbito do Plano Nacional de Contingência Contra Derrames de Petróleo** *Mirempet* • Pontos de comunicação entre os governos de Angola e da Namíbia • Processos para pedidos de ajuda internacional • Discussão sobre potenciais problemas relacionados com incidentes transfronteiriços Discussão
1545– 1600	**Discussão e sumário do Workshop de Formação** *Julien Favier, GI WACAF (Facilitador)*
1600 – 1630	**Introdução ao exercício** *Jean-Yves Huet, OTRA*
	Final do segundo dia

Após esta formação de 2 dias, será realizado um exercício transfronteira entre Angola e a Namíbia de 8 a 9 de agosto de 2019.

Este exercício teórico organizado pelo Projecto GI WACAF em cooperação com as autoridades nacionais responsáveis pela preparação e resposta a derrames de hidrocarbonetos em Angola (Ministério dos Recursos Minerais e Petróleos) e na Namíbia (Ministério das Obras e Transportes) será ***realizado simultaneamente em Luanda e Walvis Bay*** *com a intenção de testar mecanismos de cooperação na região.*

MINISTÉRIO DOS RECURSOS MINERAIS E PETRÓLEOS

WORKSOP TRANSFRONTEIRIÇO DE RESPOSTA A DERRAMES DE PETRÓLEO

LISTA DE PRESENÇA

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MINISTÉRIO DOS RECURSOS MINERAIS E PETRÓLEOS

WORKSOP TRANSFRONTEIRIÇO DE RESPOSTA A DERRAMES DE PETRÓLEO

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MINISTÉRIO DOS RECURSOS MINERAIS E PETRÓLEOS

WORKSOP TRANSFRONTEIRIÇO DE RESPOSTA A DERRAMES DE PETRÓLEO

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Annex 3: Opening address from Julien FAVIER, GIWACAF Project Manager

GI WACAF Welcoming Address

Transboundary oil spill response training and exercise

6th – 9th August, Luanda, Angola

Julien Favier, GI WACAF Project Manager

Mister the Secretary of State of the Ministry of Petroleum and Mineral Resources,

Mister the HSE Director,

Distinguished participants,

Ladies, Gentlemen, Dear Colleagues,

Bom dia.

Por favor, desculpe o meu discurso será em Inglês, porque eu não falo Português.

It is my honour and pleasure to deliver this welcoming speech at the opening of this transboundary oil spill response training and exercise between Namibia and Angola on behalf of the International Maritime Organization (IMO) and IPIECA, the global oil and gas industry association for advancing **environmental** and **social performance. I would like to welcome you all at this meeting organized by the Ministry of Petroleum and Mineral Resources with the support of IMO and IPIECA,** 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 Angola and particularly to the Ministry of Ministry of Petroleum and Mineral Resources for hosting and supporting this important event. I would like to express my thanks to Mr. Manuel Xavier and his staff for their significant assistance and efforts in putting together this workshop.

The GI WACAF project was established in 2006 and aims at strengthening the capacity of countries to prepare for and respond to oil spills through the promotion of public-private cooperation. Today it covers 22 countries in West, Central and Southern Africa. Since its inception, significant progress has been made in improving spill response capabilities by raising awareness through national and regional workshops and training. I would like here to acknowledge the engagement of Angola in the GI WACAF Project. The collaboration between the Angolan government and GI WACAF is not new by any means. It started in 2007 and since then 6 activities, including this one, have been implemented together. The present workshop gathering us this week is thus a continuity of our joint effort. 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 last Regional Conference of November 2017 where this topic of transboundary cooperation was raised. I wish also to extend my appreciation to the Benguela Current Commission that supported this initiative that aims to foster transboundary cooperation between Angola, Namibia and South Africa in case of an oil spill and is very instrumental in the regional cooperation.

Over the next four days, the key objectives of the training followed by a table-top exercise, will be to provide you with the key aspects related to trans-boundary spill incidents to help establish and manage effective transboundary response.

The table top exercise organised by the GI WACAF Project in cooperation with national authorities in charge of oil spill preparedness and response in Angola (Ministério dos Recursos Minerais e Petróleos) and Namibia (Ministry of Works and Transport) will be held simultaneously in Luanda and Walvis Bay and will be the occasion to put into practice the lessons learnt and to concretely test the cooperation mechanisms in the sub-region such as communication links between Angola and its neighbour Namibia, assistance mechanisms, the mobilization of international resources and the provisions of the respective National Plans in the case of a trans-boundary oil spill incident. Recommendations will be aggregated in a report and shared with the authorities, in Angola, Namibia, and we also know that the Benguela Current Commission will base its next action in terms of preparedness and response of those recommendations. It will therefore have a global impact.

To achieve this goal, two consultants will facilitate the training and the exercise, namely Duarte Suares from ITOPF and Jean-Yves Huet from OTRA. They gained hand-on expertise in oil spill response during numerous incidents they attended and continue to attend on a regular basis. They are also very familiar with Angola as they both previously worked in your beautiful country. 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.

On a personal note, I would like to thank the people of Angola for their warm and friendly welcoming, and I am particularly glad to have the opportunity to discover the city of Luanda during this workshop.

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

Annex 5: Proceeding of the exercise

Timeline	Content
Time (BST +1) **08:42** What: **Inject 1 (Email)** Subject: **EXERCISE - URGENT Malavita incident POLREP** From **Ship agent** to **MWT (P. Auene)**	***EXERCISE - EXERCISE - EXERCISE*** ***Dear Mr Auene,*** ***Please find in attachment the initial POLREP after the MALAVITA incident.*** ***Please acknowledge receipt of this email rapidly.*** ***Regards,*** ***Malavita Agent in Walvis Bay***
Time (BST +1): **08:44** What: **Email** Subject: **Re: EXERCISE - URGENT Malavita incident POLREP** From: **MWT (P. Auene)** to: **Ship agent**	*Received in good order. thank you*
Time (BST +1): **08:45** What: **Team briefing** From: **MWT (P. Auene)** to: **Namibia Operations team**	M P. Auene: Read information in the inject Incident Commander: give instructions to Sections heads **Note: Time out (control team): What do we know? What do we want to achieve? How do we do it? With what resources? Aerial surveillance?**
Time (BST +1): **09:12** What: **Email** Subject: **Re: EXERCISE - URGENT Malavita incident POLREP** From: **MWT (P. Auene)** to: **ship agent**	*Update:* *National Plan Operations Team activated to respond to incident.* *Angola will be duly informed.*
Time (BST +1): **10:05** What: **Attempt to notify Angola** From: **MWT (P. Auene)** to: **MIREMPET (M. XAVIER)**	***Attempts to call provided crisis number unsuccessful (not working)*** ***Manuel Xavier number not working***
Time (BST +1): **10:03** What: **Inject 2** Subject: **EXERCISE - URGENT oil spill modelling from ITOPF** From: **ship agent** to: **MWT**	***EXERCISE - EXERCISE - EXERCISE*** ***Dear Mr Auene,*** ***We have asked ITOPF to do a first modelling of the oil spill. We have just received the report that you can find in attachment of this email. This should provide you with useful information.*** ***Please let me know what you plan.*** ***Regards*** ***Malavita agent in Walvis Bay***
Time (BST +1): **11:19** What: **Email** Subject: **Re: EXERCISE - URGENT oil spill modelling from ITOPF** From: **MWT (P. Auene)** to: **Ship agent**	*Received. Thanks.* *Angola has been formally notified and an incident response team has been established there to respond to the threat.*
Time (BST +1): **11:38** What: **Inject 3** Subject: **Inspection report** From: **Ship agent** to: **MWT (P. Auene)**	***EXERCISE EXERCISE EXERCISE*** ***Dear Mr Auene,*** ***Thank you for your updates. Please find in attachment the report sent by the chief engineer on inspection casualty on Malavita.*** ***Please advise on further actions taken.*** ***Regards*** ***Malavita agent Walvis Bay***

Time (BST +1): **12:51** What: **Email** Subject: **ANGOLA CONTACT INFO** From: to:	*Angolan contact* *Xavier Manuel* *manuel.x.xavier16@gmail.com* *manuel.xavier@minpet.gov.ao* *Tel.: +244 923 401 469*
Time (BST +1): **13:15** What: **Email** Subject: **MALAVITA POLLUTION** From: **MWT (P. Auene)** to: **Ship agent**	*Dear Sirs* *We are writing to get your assurance that all costs related to the above response will be borne by the shipowner or their P&I insurance in line with the polluter pays principle.* *So far, the following activities have been carried out, with the expert guidance of ITOPF:* *1. Aerial surveillance* *2. Shoreline assessment* *In the next few days, we expect to carry out (again with the guidance of ITOPF):* *1. Dispersant application (procure and apply)* *2. Shoreline clean-up operations* *3. Environmental and social Impact assessment* *We await your earliest confirmation.* *Regards* *P Auene* *Deputy Director: Marine Pollution Control and SA*
Time (BST +1): **13:33** What: **Email** Subject: re: **MALAVITA POLLUTION** From: **Ship agent** to: **MWT (P. Auene)**	***EXERCISE EXERCISE EXERCISE*** *Dear Mr Auene,* *Thank you for your email.* *This is to confirm that reasonable expenses will be refunded by the ship owner's insurance provided that the expenses have been discussed with ITOPF and after submission of claims. In addition, we are making contact with IOPC to evaluate the level of cover available.* *Regards,* *Malavita agent Walvis Bay*
Time (BST +1): **13:40** What: **Email** Subject: Re: **MALAVITA POLLUTION** From: **MWT (P. Auene)** to: **Ship agent**	*Well noted. It would be appreciated if the polluter can be more proactive and lead the response efforts. Otherwise, we will ensure that ITOPF continues to provide the necessary advice.* *Feedback from IOPC is awaited*
Time (BST +1): **13:37** What: **INJECT 4** Subject: re: **MALAVITA incident aerial observation report** From: **Ship agent** to: **MWT (P. Auene)** Cc: **MIREMPET (M. Xavier)**	***EXERCISE EXERCISE EXERCISE*** ***Dear Mr Auene,*** ***Please find in attachment the report of the aerial surveillance mission.*** ***Please advise on the situation and way forward planned.*** ***Regards,*** ***Malavita Agent Walvis Bay***
Time (BST +1): **13:40** What: **Email** Subject: **Re: EXERCISE - MALAVITA incident aerial observation report** From: **MWT (P. Auene)** to: **Ship agent** Cc: **MIREMPET (M. Xavier)**	*Many thanks for the information.* *In the next 24-72 hours, the following is planned:* *- Considering dispersant application (aerial) - possibly OSRL* *- Shoreline cleanup operations* *- Liaise with Angola and exchange information on response activities*

Time (BST +1): **14:23** What: **INJECT 5** Subject: Re: Re: **MALAVITA incident aerial observation report** From: **Ship agent** to: **MWT (P. Auene)** Cc: **MIREMPET (M. Xavier)**	***EXERCISE EXERCISE EXERCISE*** *Dear Mr Auene and Mr Xavier Manuel,* *Thank you for the update. Following your email, I would like to advise you that after consultation with ITOPF and IOPC Fund, the shipowner will be willing to mobilise aerial dispersion platform from OSRL which logistic requirements are provided in the attached form.* *The cost are entirely covered by us.* *Please acknowledge receipt and kindly indicate:* *- Final airport destination in Namibia or Angola* *- Confirmation of minimum requirements of take-off / landing track (as in the document)* *- availability of dispersant stockpile at the airport (100 m3)* *- Custom and immigration clearance procedure (English crew)* *- Clearance / authorisation for flying at low altitude in the region* *- Points of contact at destination* *- Any other relevant information.* *Regards,* *Malavita Agent Walvis Bay*
Time (BST +1): **14:31** What: **Email** Subject: **Re: Re: Re: EXERCISE - MALAVITA incident aerial observation report** From: **MWT (P. Auene)** to: **Ship agent** Cc: **MIREMPET (M. Xavier)**	*Many thanks for the email which we have received in good order.* *We will revert with the requested info*
Time (BST +1): **15:35** What: **1st coordination meeting** Between **MWT (P. Auene)** and **MIREMPET (M. XAVIER)** **How?** Using Microsoft Teams on Control team	Meeting involving Pinehas Auene + Incident Commander + sections' heads (Planning and Operations) Discussion on aerial surveillance report Discussion on aerial dispersant spraying: from Angola (Luanda) Angola request update on spill trajectory
Time (BST +1): **16:18** What: **Email** Subject: **Re: Re: Re: EXERCISE - MALAVITA incident aerial observation report** From: **MIREMPET (M. Xavier)** to: **Ship agent** Cc: **MWT (P. Auene)**	*Please find answer **(bold)** to shipowners request of information attached* *PO Manuel XAVIER – Incident Commander Luanda :* *After consultation with ITOPF and IOPC Fund, the shipowner will be willing to mobilise aerial dispersion platform from OSRL which logistic requirements are provided in the attached form. The aircraft is ready to take off anytime from the UK base (ETA: take off + 36 hours)* *Before take-off, kindly indicate:* *- Final airport destination in Namibia or Angola* ***Angola Incident Command proposes that the aircraft flies first to Luanda to be loaded with 15 m3 of dispersant. Final airport destination will be the airport of Moçamedes (Angola), which meets requirements and will serve as a staging area.*** *- Confirmation of minimum requirements of take-off / landing track (as in the document)* ***International airport / runway 2 500 m.*** *- availability of dispersant stockpile at the airport (100 m3)* ***Dispersant can be mobilised from Luanda (SONILS base in the port of Luanda) through stockpiles of the oil industry. We are currently mobilising 110 m3. We are making arrangements to transport the***

	dispersant (IBCs) to the airport of Luanda. Ministry of Defence will make available a military aircraft (IL 76), which will do three round trips to position the dispersant at the airport of Moçamedes. ***We are also mobilising 2 vessels for dispersant application, which are also equipped for dispersant and recovery Plus 2 support vessels. ETA: to be confirmed… 2 Environmental Advisors are also been mobilised to be located in Moçamedes*** *- Custom and immigration clearance procedure (English crew)* ***Members of the Comando Nacional de Incidentes are making contact with local customs and immigration officers in Moçamedes.*** ***We also need MSDS of the dispersant coming in the tank of the aircraft*** ***We need copy of passports of all passengers (crew, pilots and technicians of the aircraft)*** *- Clearance / authorisation for flying at low altitude in the region* ***The civil aviation authority will facilitate the clearance. The certification of the pilot is needed in order to get that clearance. Please send it.*** *- Points of contact at destination* ***TBC in Luanda and in Moçamedes*** *- Any other relevant information.*
Time (BST +1): **16:45** What: **2nd coordination meeting** Between **MWT (P. Auene)** and **MIREMPET (M. XAVIER)** **How?** Using Microsoft Teams on Control team	Meeting involving Pinehas Auene + Incident Commander + sections' heads (Planning and Operations) Discussions on aerial spraying (logistics) • carried out from Angola • operational supervision OSRL / ITOPF • Dispersant stockpile from Angola • Need clearance air space + spotter aircraft from Namibia Other discussions on oil stranding : mis-interpretation of ITOPF inject: will not occur before 4 days (not 1 day)
Time (BST +1): **17:37** What: **Email** Subject: **Re: Re: Re: EXERCISE - MALAVITA incident aerial observation report** From: **Ship agent** to: **MIREMPET (M. Xavier)** Cc: **MWT (P. Auene)**	***EXERCISE EXERCISE EXERCISE*** *Dear Mr Xavier Manuel,* *Information received in good order.* *As requested, please find in attachment the copy of the passports of the crew (for the purpose of the exercise this information will actually be provided later but consider that it has been received).* *Can you confirm that the plane can leave the UK now?* *Regards,* *Malavita Agent Walvis Bay*
Time (BST +1): **16:18** What: **Email** Subject: **Overflight Clearance request form** From: **Operations team leader (Namibia)** to: **MWT (P. Auene)**	*Good day* *Please see attached the overflight clearance request form for the crew flying the dispersant.* *Regards* *Dwaine* *http://www.ncaa.com.na/docs/oflight_land_appl.pdf* 
Time (BST +1): **18:03**	***EXERCISE – EXERCISE***

What: **Email** Subject: **Re: Re: Re: EXERCISE - MALAVITA incident aerial observation report** From: **MIREMPET (M. Xavier)** to: **Ship agent** Cc: **MWT (P. Auene)**	*Yes, we confirm. Please as soon as possible…* 😊 *P/O Manuel Xavier - Incident Commander - Luanda*
Time (BST +1): **16:08** What: **INJECT 6** Subject: **EXERCISE - radar image** From: **Ship agent** to: **MWT (P. Auene)** Cc: **MIREMPET (M. Xavier)**	***EXERCISE EXERCISE EXERCISE*** *Dear Mr Auene and Mr. Manuel Xavier,* *Please find in attachment satellite imagery provided by ITOPF for your information.* *Regards,* *Malavita Agent Walvis Bay*
Time (BST +1): **16:14** What: **Email** Subject: **Re: radar image** From: **MWT (P. Auene)** to: **Ship agent** Cc: **MIREMPET (M. Xavier)**	*Much appreciated*
Time (BST +1): **17:32** What: **Email** Subject: **Fwd: Overflight authorization request** From: **Ship agent** to: **MWT (P. Auene)** Cc: **MIREMPET (M. Xavier)**	***EXERCISE*** *Dear Mr Auene,* *Please find attached the application form for overflight duly filled in by OSRL.* *Please acknowledge receipt.* *Regards,* *Malavita Agent Walvis Bay* 
END OF DAY 1	

Timeline	Content
Time (BST +1): **09:47** What: **INJECT 7** Subject: **Re: Re: Re: EXERCISE - MALAVITA incident aerial observation report** From: **Ship agent** to: **MWT (P. Auene)** Cc: **MIREMPET (M. Xavier)**	***EXERCISE EXERCISE EXERCISE*** *Dear Mr Auene and Mr Manuel Xavier,* *Please find in attachment the report of the aerial surveillance conducted this morning.* *Please advise on the plan for today.* *Best regards,* *Malavita Agent Walvis Bay*
Time (BST +1): **10:06** What: **Email** Subject: **Re: EXERCISE - OSLR plane update** From: **MWT (P. Auene)** to: **Ship agent** Cc: **MIREMPET (M. Xavier)**	*Thanks, We will send you our plans for today shortly*
Time (BST +1): **09:59** What: **Email** Subject: **EXERCISE - OSLR plane update** From: **Ship agent** to: **MWT (P. Auene)** / **MIREMPET (M. Xavier)**	***EXERCISE EXERCISE*** *Dear Mr Auene and Mr Manuel Xavier,* *This is to inform you that the aircraft has departed from the UK last night. It is currently refuelling in Nairobi airport and the pilots will have a*

	mandatory rest before flying down to Namib. Arrival estimated tomorrow (10/08) morning in Namib. *Regards,* *Malavita Agent Walvis Bay*
Time (BST +1): **10:06** What: **Email** Subject: **Re: EXERCISE - OSLR plane update** From: **MWT (P. Auene)** to: **Ship agent** Cc: **MIREMPET (M. Xavier)**	*Well received*
Time (BST +1): **09:31** What: **Email (internal)** Subject: **Revised action plan** From: **Operations team leader (Dwaine)** to: **MWT (P. Auene)**	*OPERATIONS ACTION PLAN FOR 09 August 2019* *Aerial survey assessment SitRep: SLOT 1 09:30* *SLOT 2 16:00* *Notification of areas affected - Marine (Done)* *- NCAA (done)* *- Regional/local Authorities (Done)* *Notify IMO Abidjan Convention* *Forward Command Station set up (Mine Assisted) Land line +264 65685013* *Heads flew with the morning slot 09:30* *Helicopter SURVEY of the River mouth 12:00 - Incident Commander* *-Aerial observer* *- Heads* *- ITOPF* *Assessment of sensitivity areas and marking of sensitive areas.* *Identify Areas to set up of preventative measures for shoreline clean up Stream line* *Sitrep for ground ops - Build strategy for shoreline Clean up* *Logistics plan for equipment transport and man power* *In Collaboration with the Regions (Kunene & Erongo establish and mobilise a volunteer System)* *Health and safety: set up of temporary clinic from the army* *action plan for mobilisation (Planning)* *Waste management action plan (Planning 30min)* *Media briefing in conjunction with Angola* *Consult with Angola (calls and emails)*
Time (BST +1): **10:06** What: **Email** Subject: **Fwd.: Revised action plan** From: **MWT (P. Auene)** to: **MIREMPET (M. Xavier)** Cc: **Ship agent**	*Dear Manuel* *Herewith our IAP for today - obviously it is not cast in stone and may change.* *Kindly share yours with us.* *We will call you shortly.* *Kind regards*

Time (BST +1): **11:02** What: **Email** Subject: **IAP for Day 2 - Luanda IMT** From: **MIREMPET (M. Xavier)** to: **MWT (P. Auene)** Cc: **Ship agent**	***OFFSHORE OPERATIONS*** *OSRL aircraft* *Angola Incident Management Team recommends that the OSRL plane flies to the slick location and appliers the first 15 m3 of dispersant before landing in Moçamedes (Namibe).* *Permits and authorisation confirmed from both Luanda and Moçamedes (Namibe) authorities for OSRL aircraft. Moçamedes (Namibe) will serve as staging area for the aerial dispersion operation.* *Please confirm that:* • *The aircraft is authorised to fly and spray dispersant on the slick, in Namibian waters* • *The dispersant in the tanks of the aircraft is authorised in Namibian waters and provide the Material Safety Dispersant Sheet (MSDS) of the dispersant.* *Dispersant stockpile at Moçamedes (Namibe) airport* *Started transportation of 110 m3 of dispersant from SONILS Logistic Base to Luanda airport.* *2 plane loads of dispersant (30 m3 each) are already in Moçamedes as they were transported by* *military aircraft overnight. Total: 60 m3 at the airport.* *Other operations planned at sea* • *2 vessels with dispersant application capability plus containment and recovery equipment. Approx. 17* • *hrs Luanda/Namibe. ETA 12:00 today on site.* • *2 vessels to support containment and recover operations. The same timing Luanda/Moçamedes.* *Operation will be conducted to protect* • *Priority 1 Cunene river* • *Priority 2 Tombwa* • *Priority 3 Bahia dos Tigres* *COASTAL AND SHORELINE OPERATIONS* *Near shore and Shoreline Protection / Clean-up Operations* *Conduct shoreline assessment by 2 Environmental Advisors and 2 Oil Spill Advisors with local community* *Equipment is being prepared to be sent from Luanda to Moçamedes with IL76.* *Manpower for nearshore and shore operation will come from various entities (Navy, Fire Brigade personnel, etc.)* *Planned staging area in Tombwa* *Identification of temporary waste storage areas*
Time (BST +1): **11:16** What: **Email** Subject: **Re: IAP for Day 2 - Luanda IMT** From: **MWT (P. Auene)** to: **MIREMPET (M. Xavier)** Cc: **Ship agent**	*Received in good order. Thank you* *Can we have a coordination call at 11:30 IE in 15 minutes?*
Time (BST +1): **11:36** What: **Email** Subject: **Re: IAP for Day 2 - Luanda IMT** From: **MWT (P. Auene)**	*Regarding the requested information:* *- approval for aircraft to operate in Namibia airspace has been granted* *- dispersant in question is approved for use in Namibia. MSDS will follow shortly*

to: **MIREMPET (M. Xavier)** Cc: **Ship agent**	
Time (BST +1): **09:36** What: **Email (internal)** Subject: **Re: Overflight Approval** From: **Operations team leader (Dwaine)** to: **MWT (P. Auene)**	*Good day see attached below the overflight Approval and Overflight Number.* *CA31/0058/2019* *REGARDS* *DWAINE*
Time (BST +1): **09:36** What: **Email (internal)** Subject: **fwd.: Re: Overflight Approval** From: **MWT (P. Auene)** to: **MIREMPET (M. Xavier)** Cc: **Ship agent**	*Flight authorization herewith enclosed. Thank*
Time (BST +1): **11:57** What: **Email (internal)** Subject: **Coordination of spotter plane** From: **Operations team leader (Dwaine)** to: **MWT (P. Auene)**	*Good day* *Kindly provide us with the following items:* *ETD from Luanda and estimated time of arrival into Namibian airspace for coordination of spotter plane.* *The proposed flight path over the spill area. And if they have a dedicated frequency for the two planes to coordinate.* *Our spotter plane is currently at based at the Damond mine 2-3km to the east of the Kunene mouth. The contact details of the flight crew is as follows* *Capt. M Mushimba 0811624441.* *Please provide us the contact details of the flight crew for coordination.* *Regard*
Time (BST +1): **12:35** What: **Email (internal)** Subject: **Re: Coordination of spotter plane** From: **MWT (P. Auene)** to: **Operations team leader (Dwaine)**	*Well noted. Thanks*
Time (BST +1): **10:26** What: **INJECT 8** Subject: **EXERCISE - Malavita incident angry fishermen** From: **Ship agent** to: **MWT (P. Auene)** / **MIREMPET (M. Xavier)**	***EXERCISE EXERCISE EXERCISE*** *Dear Mr Auene and Mr Manuel Xavier,* *We received complaints from several fishermen who reported having sailed into a large slick of black oil in the north of the Namibian waters.* *Please take action.* *Regards,* *Malavita Agent Walvis Bay*
Time (BST +1): **11:02** What: **INJECT 9** Subject: **EXERCISE - Malavita incident angry fishermen** From: **Ship agent** to: **MWT (P. Auene)** / **MIREMPET (M. Xavier)**	***EXERCISE EXERCISE EXERCISE*** *Dear Mr Manuel Xavier and Mr Auene,* *Please find in attachment the report of the 3rd aerial surveillance conducted.* *Regards,* *Malavita Agent Walvis Bay*

Time (BST +1): **12:15** What: **INJECT 10** Subject: **EXERCISE - Malavita incident angry fishermen** From: **Ship agent** to: **MWT (P. Auene)** / **MIREMPET (M. Xavier)**	***EXERCISE*** *Dear Mr Auene* *Message from Minister of Work and Transport: we have been requested to give a press Conference at 12:00 pm today. Anticipated questions from journalists will be as in stated in attachment.* *Regards,* *Malavita Agent Walvis Bay*	
END OF DAY 2 and OF EXERCISE		

Annex 6: Exercise injects

INJECT 1 - POLREP

GIWACAF

Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

MARINE POLLUTION REPORT (POLREP) FORMAT

NOTE: The type incidents to be reported are outlined on page 3

Send completed form to: Directorate of Maritime Affairs (DMA) or Walvis Bay Port Control.
DMA tel +264 814756070/0816649188, email skalomo@mwtc.gov.na or pauene@mwtc.gov.na

DATE AND TIME OF INCIDENT (24 HOUR FORMAT)

8/8/2019 – Early morning –	6 am

INCIDENT LOCATION NAME/ DESCRIPTION

70 NM South West of Cunene

Incident coordinates (where available)

Formats of coordinates use (select one)	Latitude of pollution	Longitude of pollution
Degrees & decimal degrees	°	°
Degrees, minutes & decimal minutes	° ′ ′	° ′ ′
Degrees, minutes & seconds	18°20'51.00"S	11° 6'46.00"E

DESCRIPTION OF INCIDENT

Communication received from Tanker MALAVITA regarding a collision at sea.

Collision between Tanker MALAVITA and containership SUNWAYS. MALAVITA struck on her side (Portside) by SUNWAYS

All crew of both vessels are accounted for / no need for medical evacuation or Search and Rescue

There is no fire or explosion onboard any of the 2 vessels

Damage to tanker

- The tanker suffered extensive damage to the hull / Portside tank #4 is ruptured
- A major leak of crude oil was observed, assessed by tanker crew to be drifting in a North –Northeasterly direction
- The crew is investigating the extent of damage and will be estimating the volume of oil spilled
- It appears that the bunker tanks of the tanker were NOT affected

Damage to container ship:

- Integrity of the container ship is not compromised / No major damage reported
- The ship proceeded on own power and was anchored 5 Nm in the South of the collision site
- It appears that the bunker tanks of the container ship were NOT affected

EXERCISE

Page 1 of 3

Form: POLREP_V.2_2018

GIWACAF

Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

POLLUTION SOURCE

[X] Vessel [ ] land [ ] other [ ] unknown

Tanker MALAVITA (characteristics attached)
- Loaded at oil terminal in Western Africa / Fully laden
- Was headed South (final destination China)

Vessel details: Type if known: [X] Tanker [ ] Container [ ] Bulk Cargo [ ] Fishing [ ] Military [ ] Recreational [ ] Other vessel type (Specify).....

Vessel name	Flag state/call sign	Namibian vessel?
MALAVITA	Singapore	[ ] Yes [X] No

Pollutant

[X] Oil → [ ] Bilge [ ] Diesel oil [ ] HFO oil [X] Crude Oil [ ] Unknown [ ] Other

Specify: MEDIUM CRUDE (oil characteristics provided in appendix)

[ ] Liquid chemical

Name | MARPOL Cat /UN No.

[ ] Garbage
[ ] Package
[ ] Sewage
[ ] Other

Details/description

EXTEND OF POLLUTION (observation by vessel crew at 7:30 am)

Size of pollution (length & width in meter): Large slick observed (more than 2 NM in length) headed North. Mainly black in appearance

Amount of pollutant if known (litres) : unknown but significant (incident under investigation by vessel crew)

ADDITIONAL INFORMATION

Has the discharge stopped? [ ] Yes [ ] No [X] Unknown

Page **2** of **3**

Form: POLREP_V.2_2018

GIWACAF

Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

Response action undertaken? ☐ Yes ☐ No If yes please provide details below

Preliminary assessment of damages shows that a significant proportion of cargo of portside tank 4 was lost. No other tanks seem to be impacted. Damage to Port Side Crude Oil Tank 4 is under investigation to assess the volume of oil that has been released. The results of investigation will be communicated in due course.

Contact of MALAVITA Shipowner correspondent in Walvis Bay:-

Tel: 0816470919

Email: malavita.agent@gmail.com

ITOPF have been mobilised. A technical advisor, Alex Hunt is present in Walvis Bay to provide technical

Metocean information

TIME	WIND	CURRENT
From 08/08 6am to 09/08 6am	Direction : 200° Speed: 10 kt	Direction : 20° Speed: 0.30m/S
From 09/08 6am to 10/08 6am	Direction : 225° Speed: 15 kt	Direction : 10° Speed: 0.50m/S
From 10/08 6am to 11/08 6am	Direction : 240° Speed: 10 kt	Direction : 15° Speed: 0.30m/S

X	Photos taken →	Details: MALAVITA from drone (7:30 am)	Held by: Correspondent
☐	Videos taken →	Details	Held by
☐	Sample taken →	Description	Held by
☐	Items retrieve →	Description	Held by

DETAILS OF ORIGINAL REPORTER

Name **PAUL**	Position **C/E**	Phone **N/A**

GIWACAF

Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

NAME OF CONTROL AGENCY	NAME OF STATUTORY AGENCY
MWT	

Equipment used
☐ *NAMPORT* ☐ *GRN/MWT* ☐ Other

Possible further action
☐ *legal* ☐ *Other* ☐

Details

SENDER DETAILS

Name **JOHN**	**MALAVITA correspondent in WB**	Date **08/08/2019**
Phone : **TBC**	Fax **TBC**	Email : **malavita.correspondent@gmail.com**

PRIVACY STATEMENT

MWT is collecting the information on this form to enable it to carry out its role as managing agency of the of the National Plan. MWT may give some or all of this information to other Government bodies, NGOs or international organizations who may have responsibilities under the National Plan or law enforcement.

SUMMARY OF INCIDENTS TO BE REPORTED

All slicks including deck washing, that can be seen trailing a vessel should be reported. The type of substance contained in the slick may not be able to be determined until further investigation has been undertaken by enforcement agencies.

REPORTABLE	NON-REPORTABLE
Oil • All slicks trailing from a vessel • All pollutions in the marine environment (notwithstanding the size or amount of oil or sheen) • All pollutions where NMPCP equipment is used in the response *Note: If oil or sheen is visible on the surface of the water then it is an illegal discharge MARPOL permits oily discharges at 15 parts of oil to one million parts of water (15 ppm). Oil discharged at sea cannot be visually observed until at least 50 ppm and even that may not be readily discerned depending upon the observation platform, sea state, weather conditions etc.*	• Algal bloom • Hydrogen sulphide eruptions • Dredging foam • Coral spawning
Chemicals • All sightings of slicks/discolorations trailing vessels or offshore platforms	• Liquid chemicals from land-based sources

Form: POLREP_V.2_2018

EXERCISE

INJECT 2 – ITOPF assessment

GIWACAF

Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

Inject 2

DATE: 8th August 2019,

TIME: 10 am

TO: MALAVITA ship correspondent in Walvis Bay
Email: malavita.correspondent@gmail.com

ADVICE REGARDING THE RELEASE OF CRUDE OIL FROM TANKER MALAVITA

ITOPF was informed of the release of an unknown quantity of CRUDE OIL in Namibian Waters, following a side collision between tanker MALAVITA and containership SUNWAYS at location 18°20'51.00"S 11° 6'46.00"E (around 70 NM South West of Kunene). On the basis of the information provided, we were requested to provide technical advices on potential oil fate and behaviour based on available oil characteristics and metocean information in the region.

Characteristics of Crude oil

Medium crude oil (API: 22.6; ITOPF group 3) loaded on MALAVITA from West African oil terminal

Oil Property	Crude oil
API	22.6
Specific Gravity or density	917.3kg/m3 at 15°C (2) 882,78 g/ cm3 at 26°C (1)
Pour Point	-34°C
Viscosity	410 mPas at 22°C (1) 370 mPas at 26°C (1) 120 mPas at 30°C (1)
H2S	N/ A
Flash Point	92°C after 1 hour (2) >100°C after 3 hrs (2)
Composition	59.9 % Saturated HC (2)
	24,2 % Aromatics (2)
	13% Resins (2)
	2,9 % Asphaltenes (2)
Wax	13%

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1, Oliver's Yard, 55 City Road, London EC1Y 1HQ, United Kingdom
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Email: central@itopf.com Web: www.itopf.com
Registered in England No. 944863. Registered Office as above.

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Window of dispersibility	Estimated over 72 hrs with 5 m/s of wind

Metocean conditions

Water temperature in the area: 18°C

TIME	WIND	CURRENT
From 08/08 6am to 09/08 6am	Direction : 200° Speed: 10 kt	Direction : 20° Speed: 0.30m/S
From 09/08 6am to 10/08 6am	Direction : 225° Speed: 15 kt	Direction : 10° Speed: 0.50m/S
From 10/08 6am to 11/08 6am	Direction : 240° Speed: 10 kt	Direction : 15° Speed: 0.30m/S

Trajectory modelling an potential shoreline impact

Based on the above, the expected trajectory of the oil is as follows:

EXERCISE

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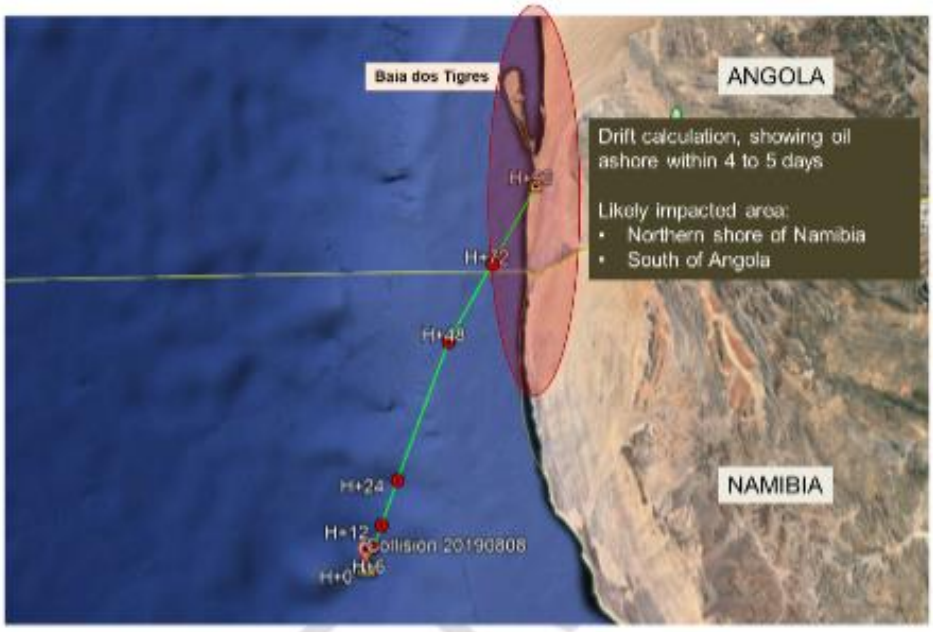

Potential shoreline oiling highlighted in red accounts for uncertainties in current and wind forecast and other oil behaviours such as oil spreading and fragmentation.

Oil behaviour analysis

Oil behaviour (mass balance) for wind speeds of 10 knots (5m/s) and 20 knots (10m/s) as well as potential dispersibility was provided by shipowner and are reported below

Mass balance

Wind: 10 knots

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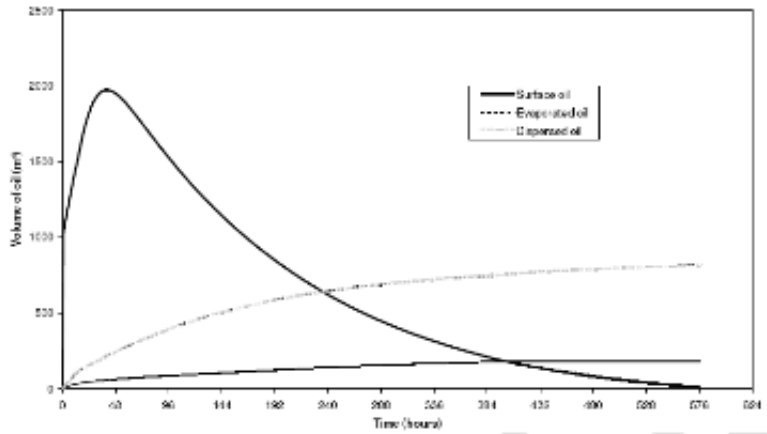
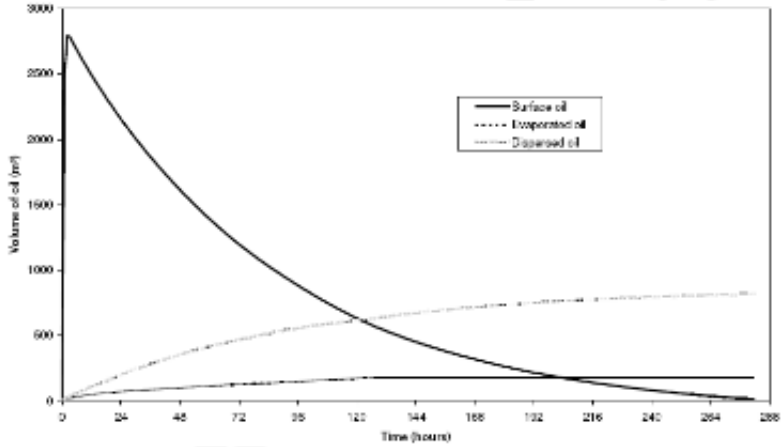


Wind: 20 knots



Dispersant time window

The figures below are based on the use of Inipol IP 90, Corexit 9500A Finasol OSR 52 and Slickgone NS at 26°C

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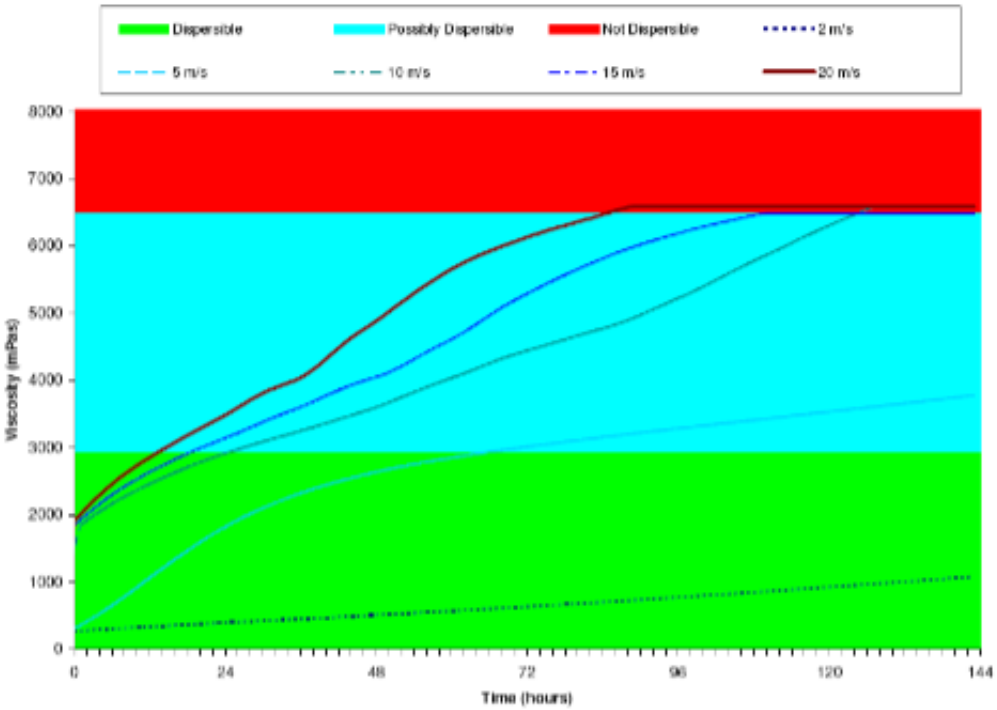

Provisional recommendations

According to provisional trajectory modelling outputs, shoreline oiling is expected within 3 to 5 days. At-sea response operations should be implemented as soon as possible with priority given to chemical dispersion until oil has emulsified (expected 72 hours with current wind speed (10knots). Provisions should also be made to implement containment and recovery techniques after oil is emulsified and cannot be chemically dispersed anymore. Shoreline protection strategies should be implemented in sensitive areas in Namibia AND Angola as well. Provisions for shoreline clean-up in should also be made in this area.

Alex Hunt

Technical Advisor, ITOPF

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INJECT 3 – Inspection report

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Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

INJECT #3

DATE	8th August 2019
TIME	11 :00
FROM	MALAVITA Ship agent
TO	MWT - Namibia

Following the collision with the container ship SUNWAYS, the crew of MALAVITA has completed an inspection of the vessel and reported the following conclusions:

POLLUTION

- Port side #4 tank of the vessel has suffered extensive damage, resulting in the loss of most of the cargo. It is estimated that 17,000 tons of the crude oil cargo have been spilled at sea.
- The remaining cargo has been transferred to the slope tank of the vessel and spillage can be considered as stopped / no further leakage could be seen.

INTEGRITY OF VESSEL

Considering the extensive damage suffered,

- Meteorological conditions on site allowed the tanker to be moved on her own power and anchored safely at a position 1 Nm South West of the collision;
- The ship captain was in contact with shipowner and an internationally recognized salvage expert has been mobilised from South Africa and is being dispatched to the vessel, for detailed inspection and estimating whether the ship can safely sail to a safe haven;
- Contacts have been initiated with the South African authorities to investigate possibility to sail the ship to the port of Cape Town, for repairs.

INJECT 4 – Aerial observation report No. 1

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EXERCISE – EXERCISE – EXERCISE - EXERCISE

STANDARD POLLUTION OBSERVATION/DETECTION LOG

NO POLLUTION DETECTED ☐

REPORTING AUTHORITY	AIRCRAFT REG	MISSION NO	CAPTAIN	CO PILOT	OPERATOR	OBSERVER	DAY	DATE	MONTH	YEAR
MMT	N/A	#1	MIKE	LUKE		ITOPF	04	08	08	2019

FLIGHT TYPE	ROUTE/ AREA		TAKE OFF	LANDING	TIME OVER THE SEA DAY		TIME OVER THE SEA NIGHT		TOTAL TIME OVER THE SEA	
EXR	Kunene		09:00	13:00	Hrs	mins	hrs	mins	4 hrs	mins

Flight path and oil observation

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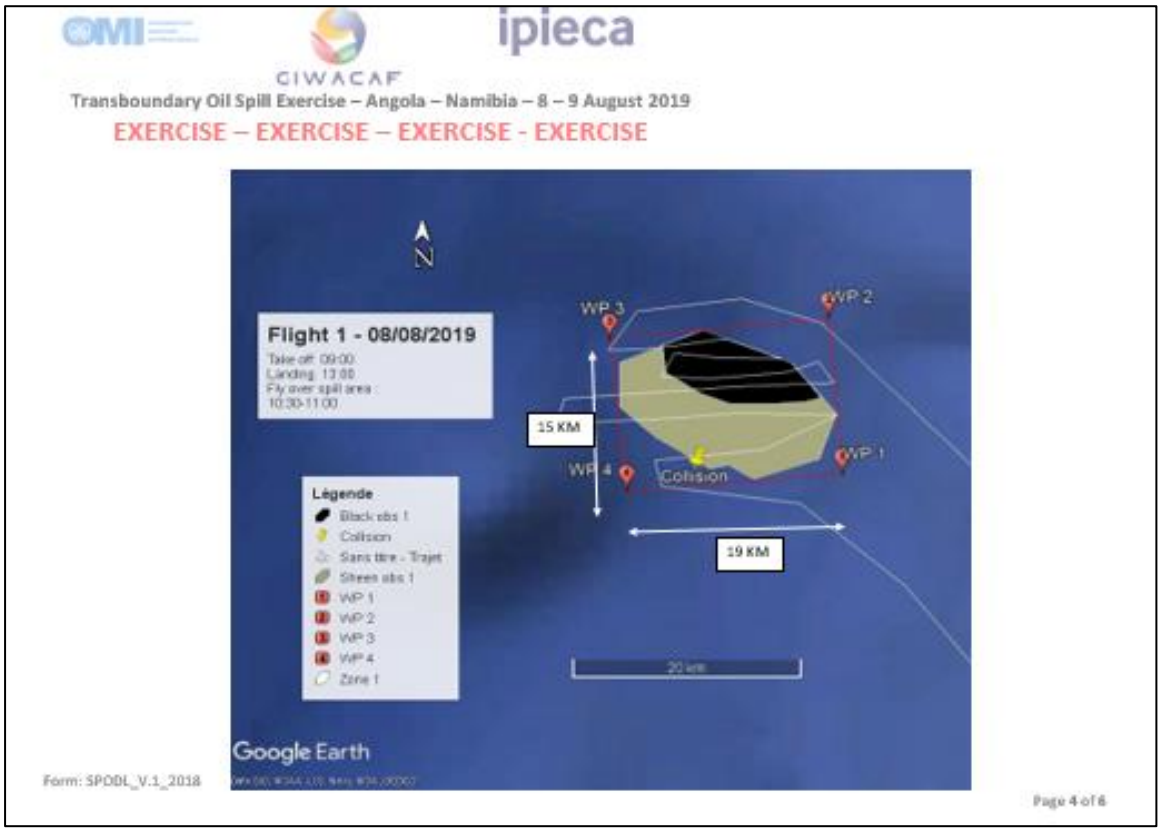
EXERCISE – EXERCISE – EXERCISE - EXERCISE

Form: SPODL_V.1_2018

Page 2 of 6

No	AREA CODE	TIME UTC	WP	POSITION (ZONE 1) LAT 'SOUTH'	LONG 'EAST'	DIMENSION LENGTH Km	WIDTH Km	AREA COVER %	OIL AREA KM²	1	2	3	4	5	Other	MAXIMUM VOLUME M³	COMPATIBLE? YES/NO
1	OIL 1	10:30	1	18°21'3.64"S	11° 9'25.85"	19	15	60 %	179km2								
			2	18°13'4.40"S	11°13'30.04"E							40%	20%		Clear: 40%	17100 m3	
			3	18°14'11.26"S	11° 2'35.47"E												
			4	18°21'53.79"S	11° 3'27.28"E												



INJECT 5 – OSRL Logistics support

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Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

INJECT # 5

DATE	8th August 2019
TIME	14 :00
FROM	MALAVITA Ship agent
TO	MWT – Namibia, MIREMPET Angola

After consultation with ITOPF and IOPC Fund, the shipowner will be willing to mobilise aerial dispersion platform from OSRL which logistic requirements are provided in the attached form. The aircraft is ready to take off anytime from the UK base (ETA: take off + 36 hours)

Before ~~take off~~, kindly indicate:

- Final airport destination in Namibia or Angola
- Confirmation of minimum requirements of ~~take off~~ / landing track (as in the document)
- availability of dispersant stockpile at the airport (100 m3)
- Custom and immigration clearance procedure (English crew)
- Clearance / authorisation for flying at low altitude in the region
- Points of contact at destination
- Any other relevant information.

INJECT 6 – Satellite imagery

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Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

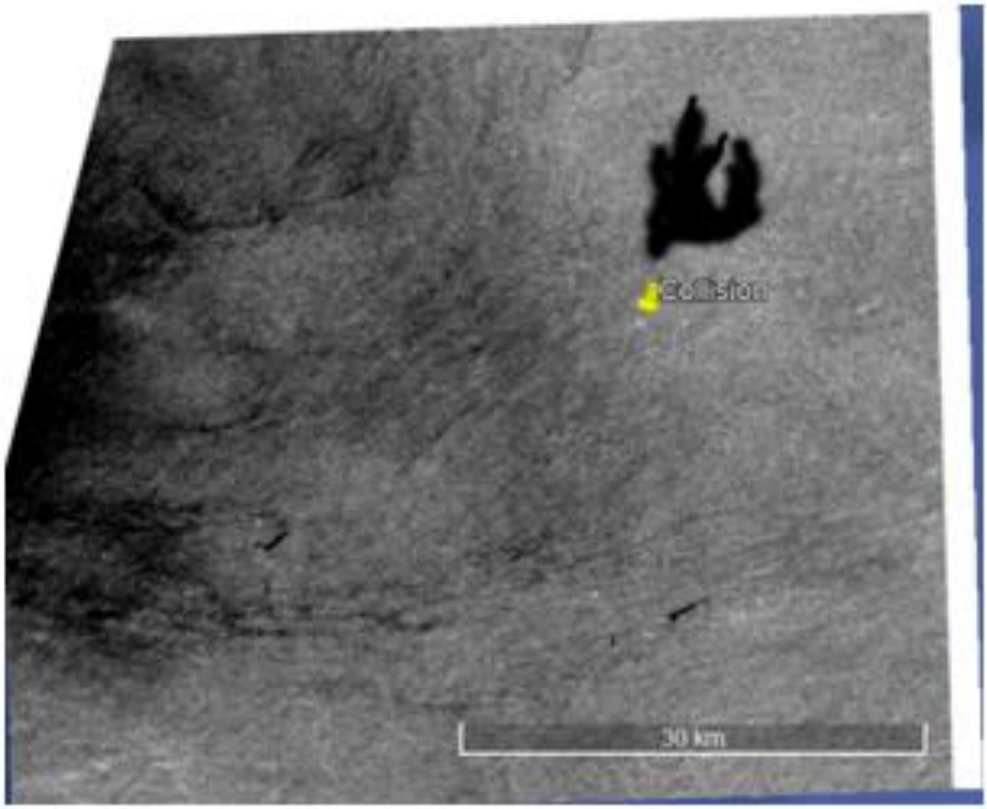
EXERCISE – EXERCISE – EXERCISE - EXERCISE

INJECT # 6

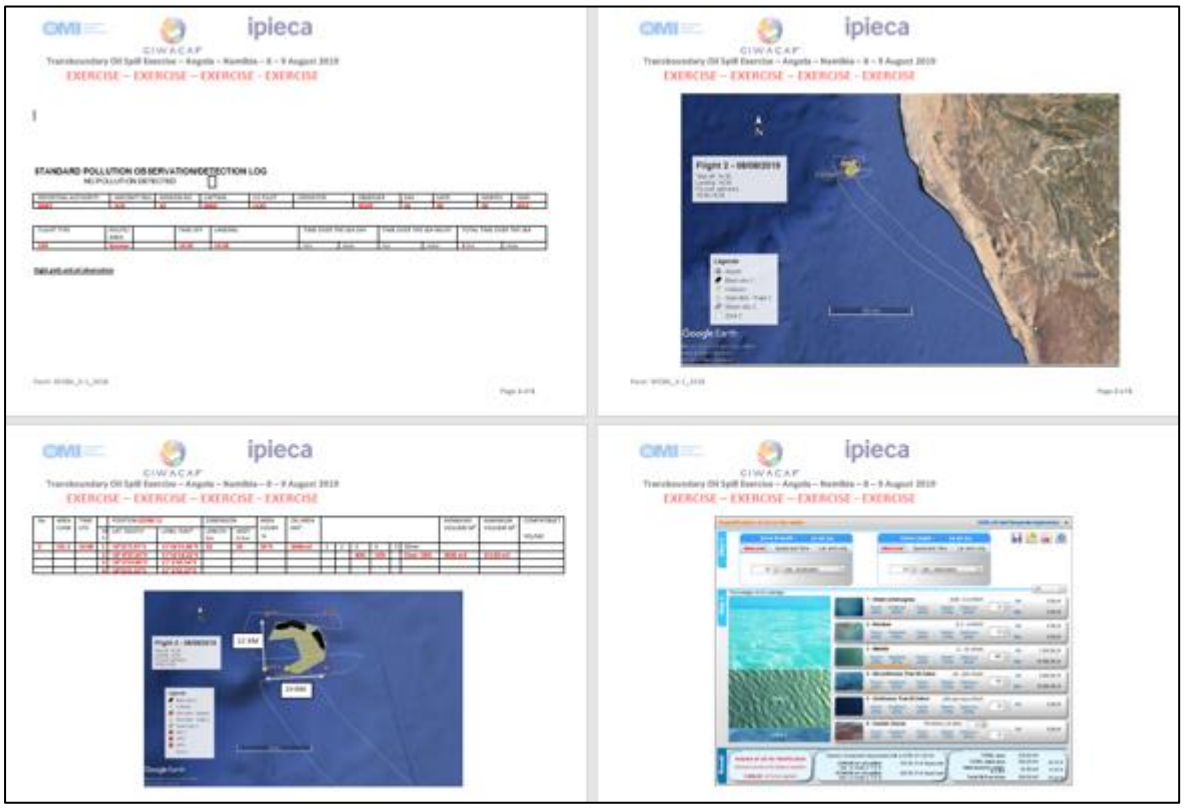
DATE	8th August 2019
TIME	15 :00
FROM	MALAVITA Ship agent
TO	MWT – Namibia, MIREMPET Angola

Dear all

The following is satellite image (radar) showing the extent of the spill at 15:00 this day.



INJECT 7 – Aerial observation report No. 2



INJECT 8 – Angry Fishermen

Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

INJECT # 2

DATE	9th August 2019
TIME	09:30
FROM	Harbour Master Walvis Bay
TO	MWT Incident Commander

Following the news of the collision which took place yesterday between tanker MALAVITA and the container ship SUNWAYS, representatives of the fishing industry requested a meeting early this morning, in order to express their concern.

CONCERN ABOUT THE POLLUTION SITUATION

Several fishermen reported having sailed into a large slick of black oil in the north of the Namibian waters.

REMINDER OF THE IMPORTANCE OT THE FISHING INDUSTRY IN WALVIS BAY

They reminded that the fishing industry is the cornerstone of the city's economy which has developed into a leading force in the world's fish supply market. Locally, the industry creates more than 8,000 jobs and generates 10% of the country's GDP. There are more than 2 kilometres of landing quays, cold storage, processing and canning facilities, playing an important role in the development of Walvis Bay.

High value fish and related products are processed for export purposes to niche markets in Europa, Australia, the United States and Hong Kong. 90% of the hake caught and processed is exported to the Spanish markets. Other fish species caught commercially include pilchards, anchovy, tuna, monk, sole, horse-mackerel and other demersal species.

IMPACT OF THIS CATASTROPHIC OIL SPILL

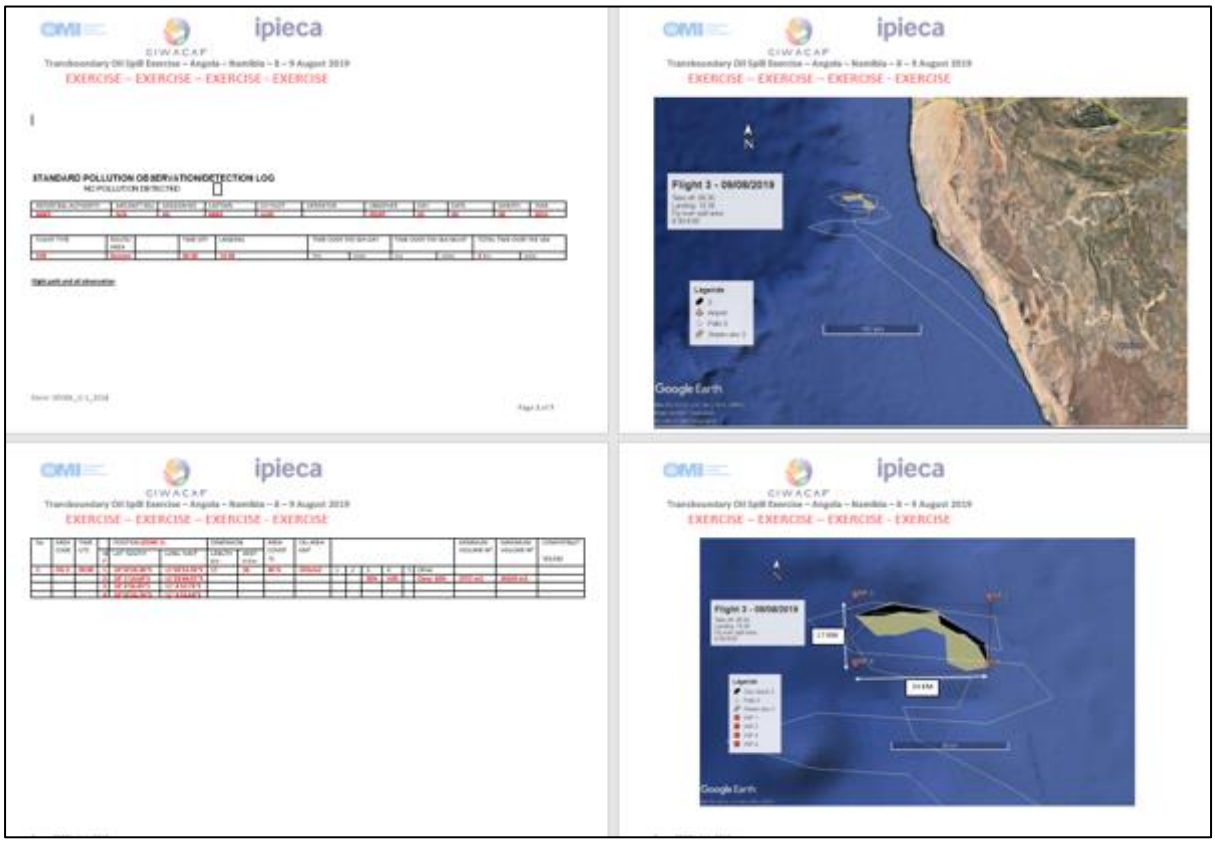
The representatives of the fishing industry estimate that this oil spill will have disastrous consequences on the country's economy

In order to preserve the image of exceptional quality of the Namibian fishing industry, the representatives are of the opinion that fishing has to be stopped until the situation is cleared up.

They demanded information on

- Who is going to pay for all this?
- What is the government going to do to compensate the industry and avoid that 8,000 jobs disappear.

INJECT 9 – Aerial observation report No. 3



INJECT 10 – Ministry request

Transboundary Oil Spill Exercise – Angola – Namibia – 8 – 9 August 2019

EXERCISE – EXERCISE – EXERCISE - EXERCISE

INJECT # 4

DATE	9th August 2019
TIME	11:00
FROM	H. Minister of Work and Transport
TO	MWT Incident Commander

Following the news of the collision which took place yesterday between tanker MALAVITA and the container ship SUNWAYS, we have been requested to give a press Conference at 12:00 pm today. Anticipated questions from journalists will be as follows:

Status of the pollution :

- Quantity of oil spilled at sea
- Oil behaviour and trajectory
- Risk of affecting other countries in the region

Response actions implemented

- Details of response organisation in country
- Details of response strategies at sea / on the shoreline
- What response resources have been mobilised? From Where?
- How long is the clean-up expected to be?
- Provide a list of organisations involved in response activities with respective role and responsibilities

Environmental and socio-economic impacts

- What are the environmental resources that will be impacted
- What measures have been taken to mitigate the impacts at sea/ on the shoreline
- Impact on marine traffic in the region
- Impact on fishing activities in the region
- Estimation of economic impact. Who is liable for these costs?

Please summarize the requested information in brief presentation that could be presented to the journalists.

Annex 7: Pictures

Preparation of exercise – Workshop at MIREMPET

Angola National Incident Management Team

Coordination meeting Planning, Operations and Finance sections

Timeout – Coordinated by Angola National Incident Commander – Use of displays for point of situation

Timeout – briefing by Operations section

Regular Points of situation – contacts with Namibia Incident Command Team
Using computer with teleconferencing software