THE REPUBLIC OF UGANDA

The National Oil Spill Contingency Plan

DEPARTMENT OF DISASTER PREPAREDNESS AND MANAGEMENT
OFFICE OF THE PRIME MINISTER
2020

With support from:
The Royal Norwagian Government

THE REPUBLIC OF UGANDA

The National Oil Spill Contingency Plan 2020

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DEFINITIONS

Claim:	A request made in writing for a certain sum (specific financial amount), for compensation for damages or costs resulting from an oil spill incident.
Competent National Authority:	The Petroleum Authority of Uganda designated by the National Environment Act, 2019 to take overall responsibility for implementation of this Plan.
Convention:	An agreement between sovereign states, including a treaty and an agreement, is open for adoption by any state that desires. It usually takes a domestic statute to give effect to a convention, which does not come from ratification alone.
Environmental Risk Assessment:	A systematic process for identifying and estimating the likelihood or probability of an adverse or hazardous outcome or event and its consequence on human health or the environment
Lead agency:	A ministry, department, agency, local government or public officer in which or in whom the functions of control or management of any part of this National Oil Spill Contingency Plan is vested, and which or who is expected to work in coordination with other government institutions, licensees, operators, regional or international organisations for oil spill preparedness and response.
Licensee:	A person to whom a licence is granted under the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.
Operator:	A licensee or any other entity executing on behalf of one or several licensees, the day to day management of petroleum activities or midstream operations.
Petroleum activity:	Planning, preparation, installation or execution of activities related to petroleum including reconnaissance, exploration, development, production, transportation, storage, and cessation of activities or decommissioning of facilities under the Petroleum (Exploration, Development and Production) Act, 2013.
Petroleum products:	Products resulting from refining or conversion of petroleum commodities.
Midstream operations:	Planning, preparation, installation and execution of operations related to refining, conversion, transmission, or storage of petroleum products, including cessation of activities or decommissioning of facilities under the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.
Petroleum supply:	Import, landing, loading, unloading, processing, transport, storage, distribution, wholesale or retail of petroleum products, including by industrial consumers who buy their products directly from importers or wholesalers.

FOREWORD

The National Oil Spill Contingency Plan (NOSCP) comes at a crucial time in our national history when we join the league of Oil Producing Countries. Our resolve and determination to rise above the challenges that come with oil production in developing economies is not in doubt. Oil production in Uganda must, and will be safe for our environment. Now more than ever, Uganda Vision 2040, the East African Community Vision 2050 and the Africa Agenda 2063 as well as the Sustainable Development Goals (SDGs) will provide the framework needed to ensure that the people of Uganda benefit from the opportunities that the exploitation of petroleum resources presents.

Oil spill contingency planning is the bedrock for effective preparedness and response to oil spill emergencies. With the environmental sensitivities that Uganda presents, especially in the Albertine Graben, Protected Areas and human settlements, it is imperative that the NOSCP is couched to respond effectively. For this reason, the tiered oil spill response structure is geared to commensurate with the level of risk and resources required to respond to oil spills.

The NOSCP provides for establishment of an effective and coordinated national oil spill preparedness and response system, including designating responsible institutions. It also provides for collaboration between licensees, operators and other private sector players, as well as local governments and the Central Government. This relationship will further be strengthened by planning, mitigating and managing devastating risks associated with oil spills. International assistance to manage large oil spills may also be required.

The Plan is premised on the policy and regulatory framework for the oil industry, including Uganda's policies and laws applicable in the Upstream, Midstream and Downstream petroleum sector. The NOSCP is consistent with the commitment of the National Resistance Movement (NRM) Government to provide an enabling environment for the sustainable exploitation of Uganda's resources, while enhancing the livelihoods of the people and fostering wealth creation.

I wish to appreciate all arms of Government, and Development Partners for their contribution towards the preparation of this Plan, and urge a collective action to the implementation of the Plan for the benefit of the people and the environment of Uganda.

For God and My Country

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Ruhakana Rugunda (Dr.)
PRIME MINISTER
REPUBLIC OF UGANDA

ACKNOWLEDGEMENT

On behalf of the Government, I would like to extend sincere gratitude to H.E the President of the Republic of Uganda for his strategic guidance and support towards the development of Uganda's Oil and Gas sector. I particularly thank him for spearheading the partnership between Uganda and the Royal Government of Norway as the key Development Partner of choice in strengthening Uganda's institutional capacity for the management of petroleum resources.

We thank the cabinet of Uganda for their vigilance in prompting Uganda's preparedness towards oil spill risks with the development of the country's oil and gas sector. We also take this opportunity to acknowledge Cabinet for approving the National Oil Spill Contingency Plan (NOSCP) and availing the necessary resources to various Government institutions for the development of this Plan.

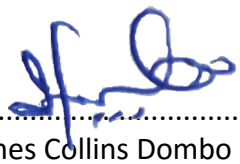
On a similar note, I would like to thank the Policy Committee on Environment under the Chairmanship of the Rt. Hon. Prime Minister Dr. Ruhakana Rugunda, for guiding the process of developing the NOSCP. Specifically, I thank the Rt. Hon. Prime Minister for coordinating the relevant Government institutions and stakeholders to ensure that this Plan is in place; and the Minister for Disaster Preparedness and Management Hon. Eng. Hillary Onek for providing oversight to the process.

The Government of Uganda is grateful to the Royal Norwegian Government for the financial and technical support it has given to Uganda through the Norwegian Agency for Development Cooperation (NORAD) in the Strengthening the Management of Oil and Gas Programme in Uganda. It is this support that has facilitated the preparation, compilation, and printing of the National Oil Spill Contingency Plan (NOSCP) for Uganda. Special gratitude goes to the Norwegian Coastal Administration (Kystverket) and the Norwegian Environment Agency whose expertise and experience has been invaluable towards preparing the NOSCP.

In a special way we would like to thank the Ugandan and Norwegian Institutions that availed their staff to be part of the team that worked tirelessly to have this Plan in place. The Office of the Prime Minister (Department of Disaster Preparedness and Management) coordinated and collaborated with the Ministry of Water and Environment; the Ministry of Energy and Mineral Development; the Ministry of Justice and Constitutional Affairs; the Ministry of works and Transport; the National Environment Management Authority; and the Petroleum Authority of Uganda, to undertake the development of the NOSCP.

Specifically, recognition goes to the following persons for their hands-on commitment in the development of the Plan. These are:

SN	Name	Title	Institution
1.	Ms Rose Nakabugo	Ag. commissioner for Disaster Management	OPM
2	Ms. Akello Christine Echookit	Deputy Executive Director	NEMA
3	Ms. Harriet Lwabi	Director – First Parliamentary Counsel	MoJCA
4	Mr. Menhya Gerald	Ass. Commissioner Disaster Preparedness	OPM
5	Mr. Isaac I.G. Ntujju	Principal Environment Inspector	NEMA
6.	Ms. Awori Nancy	Senior State Attorney	MoJCA
7.	Ms. Pamela Komujuni-Kalule	Senior Disaster Management Officer	OPM
8.	Ms. Munduru Sandra	Senior Logistics Officer	MoWT
9.	Ms. Anino Maureen	Principal Environment Officer	MWE
10	Ms. Kawala Sarah	Environment Inspector	NEMA
11.	Mr. Tumwebaze Joel	Health, Safety & Environment Officer	MEMD
12.	Mr. Bjerkemo Ole Kristian	Senior Advisor	Kystverket (NCA)
13.	Ms. Anette Fischer	Senior Advisor	Miljodirektoratet (NEA)
14.	Mr. Frank Eklo	Senior Advisor	Miljodirektoratet (NEA)
15.	Mr. Johnny Auestad	Senior Advisor (Retired)	Miljodirektoratet (NEA)



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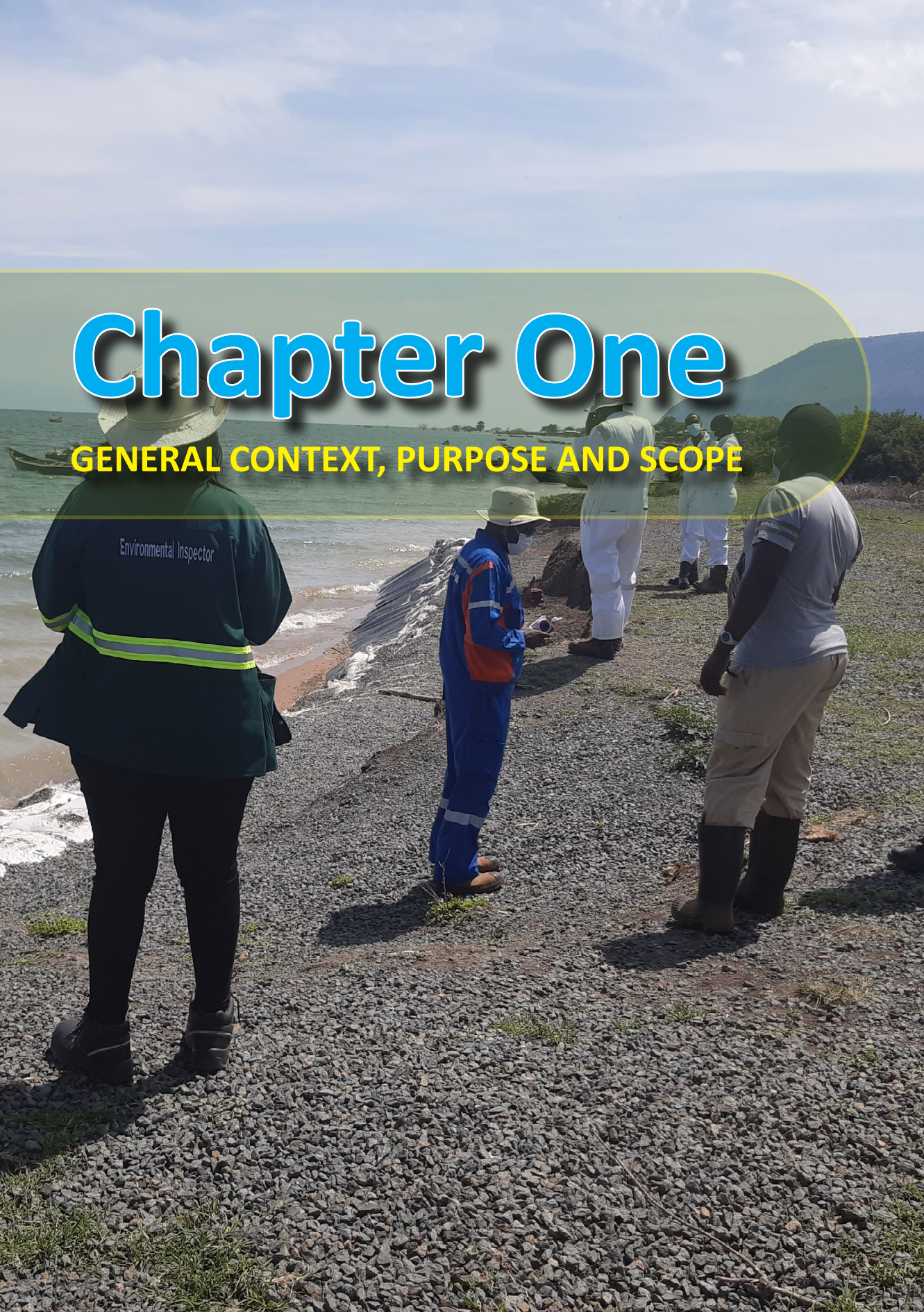
James Collins Dombo

AG. PERMANENT SECRETARY

OFFICE OF THE PRIME MINISTER



Chapter One

GENERAL CONTEXT, PURPOSE AND SCOPE

Chapter One: GENERAL CONTEXT, PURPOSE AND SCOPE

1.0 Background

The petroleum potential of Uganda was first documented in the Albertine Graben in 1925 by A.J. Wayland, a government geologist. The first well, Waki-B1, was drilled in the Butiaba area in 1938, confirming oil shows. It was not until the 1980s, however, that an increased and targeted focus on exploration was initiated, culminating into the first commercial discovery at Mputa-1 well in 2006. By the end of 2016, 121 exploration and appraisal wells had been drilled, out of which 106 were found to contain hydrocarbons.

By 2020, following exploration and appraisal, over 6 billion barrels of oil equivalent in place were estimated, out of which approximately 1.2 to 1.4 billion barrels were to be recoverable. The area explored represented less than 40% of the total area with potential for oil and gas production in the Albertine Graben.

Exploration in other sedimentary basins namely; Hoima basin, Kadam-Moroto basin, Lake Kyoga basin, Lake Wamala basin and Lake Victoria basin has not yet yielded conclusive results.

Commercial production of oil and gas requires infrastructure such as production wells, processing plants, pipelines and storage facilities. Petroleum supply infrastructure will also be required. These come with increased risk of oil spills from oil and gas operations and facilities, which could have environmental and socio-economic consequences. Consequently, the National Oil and Gas Policy for Uganda, 2008 requires oil and gas activities to be undertaken in a manner that conserves the environment and biodiversity, especially in the bio-diverse Albertine Graben which is home to a number of Protected Areas supporting tourism and wildlife conservation.

In view of the above, licensees and operators have a duty to establish an oil spill prevention, preparedness and response system designed to prevent, detect and stop oil spill, and to avoid or minimize the impact of the oil spill on human health and the environment.

Primarily, licensees and operators shall implement preventive measures to ensure that oil spills do not occur. Nevertheless, the risk of oil spill incidents remains and the licensees and operators must be prepared to respond appropriately in accordance with applicable law, in order to prevent, detect, stop and limit the consequences of an oil spill. In the event of an oil spill, licensees and operators shall immediately activate their oil spill preparedness and response system to avoid or minimize harm to human health and the environment.

The primary responsibility for oil spill prevention, preparedness and response lies with the licensees and operators. It is, therefore, mandatory for the licensees and operators to establish an oil spill preparedness and response system in accordance

with the National Environment Act, 2019 and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. For this purpose, licensees and operators shall prepare their own oil spill contingency plans which shall be routinely reviewed and updated, and should be guided by this Plan, which provides the national framework for oil spill contingency planning.

Local governments and other lead agencies are required to establish oil spill preparedness and response systems for small oil spills that may occur or cause damage within their jurisdictions. The preparedness and response by lead agencies is additional to that required for licenses and operators. In the event of an oil spill, the lead agency is obliged to respond to oil spills with resources available to it and to assist Governmental response, upon request. Hence, just like licensees and operators, local governments and other lead agencies are required to prepare their own oil spill contingency plans.

The Government shall put in place measures for oil spill preparedness and response for major oil spills. The measures by Government are additional to the oil spill preparedness and response system of the licensees and operators and are intended to increase general resilience and preparedness.

In the event of a major oil spill, the Government may assist the licensees and operators in their response operations. The Government may take over the lead of oil spill response operations in accordance with the National Environment Act, 2019, the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 and the National Policy for Disaster Preparedness and Management, 2011. Nevertheless, the licensees and operators will remain liable for the consequences of the oil spill, and have a duty to continue the response under the lead of the Government. In circumstances where there is no particular person responsible or there are no response resources available to the responsible person, the Government shall initiate response in accordance with this Plan, using available response resources.

1.1 Policy, legal and regulatory framework

The National Environment Act, 2019 and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 establish the requirements for overall oil spill preparedness and response capability. In addition, a number of policies, legislation, international conventions and standards are relevant in this regard. Altogether, these establish the framework in which the National Oil Spill

Preparedness and Response System and the industry›s preparedness and response requirements will integrate. A summary of relevant policies, legislation, international conventions and standards is contained in *Appendix 1.*

The National Environment Management Authority (NEMA) shall be responsible for the environmental regulatory aspects of oil spill preparedness and response. The National Environment Management Authority shall also audit and monitor oil spill prevention, preparedness and response systems established in accordance with the National Environment Act, 2019 and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. In the performance of this function, the National Environment Management Authority will coordinate with institutions indicated in *Chapter 4.*

The National Environment Management Authority will also provide guidance on environmental phenomena that may have changed due to an oil spill. In addition, it will liaise with the Office of the Prime Minister, the Competent National Authority (the Petroleum Authority of Uganda) and other relevant lead agencies to map available sources of oil spill response equipment and to ensure the establishment of vital oil spill response equipment hubs at strategic areas to facilitate rapid response.

1.2 Rationale for oil spill contingency planning

This Plan provides a comprehensive framework to guide national oil spill preparedness and response.

The development of this Plan is informed by the various studies carried out by the Government relating to petroleum activities, midstream operations and petroleum supply. These studies include environmental sensitivity profiling and mapping, and strategic environmental assessment, which gave rise to, among others, the Environmental Sensitivity Atlas for the Albertine Graben and the Strategic Environment Assessment (SEA) for Oil and Gas Operations in the Albertine Graben. The Environmental Sensitivity Atlas, first developed in 2009, provides planners with tools to identify resources at risk, establish environmental protection priorities and identify timely and appropriate response and clean-up strategies. The Environmental Sensitivity Atlas emphasises the need to ensure that exploitation of oil and gas resources is done without compromising the diversity and quality of environmental resources.

The Strategic Environment Assessment (SEA) for Oil and Gas Operations in the Albertine Graben, undertaken in 2013, provides a holistic view of the physical environment, cultural heritage, as well as socio-economic issues that may arise as a result of current and future oil and gas activities in the region. The Strategic Environment Assessment recognises that oil spill contingency planning should guide

national oil spill preparedness and responses, including a risk analysis of the oil and gas activities.

In 2014, as the basis for the development of this Plan, an Environmental Risk Assessment was undertaken in the Albertine Graben area. The purpose of the Environmental Risk Assessment was to identify hazards, analyse vulnerabilities (of the environment and people) and assess environmental risks associated with Oil and Gas Exploration in the Albertine Graben. In the same year after the Environmental Risk Assessment, an Oil Spill Contingency Analysis (OSCA) for Oil and Gas Exploration in the Albertine Graben area was undertaken. The purpose of the Oil Spill Contingency Analysis was to determine the required oil spill capabilities to respond to the environmental and socio-economic risks identified in the Environmental Risk Assessment.

In view of the aforementioned rationale, the effectiveness of this Plan will depend on:

- The oil spill preparedness of licensees and operators.
- Multi-sectoral planning and preparedness at all levels of Government.
- Regional and international cooperation.
- Adequate capacity building, training and exercises.

1.3 Purpose and scope

This Plan establishes the national preparedness and response system and is not intended to substitute the legal requirements for licensees and operators to put in place oil spill prevention, preparedness and response systems.

The purpose of this Plan, therefore, is—

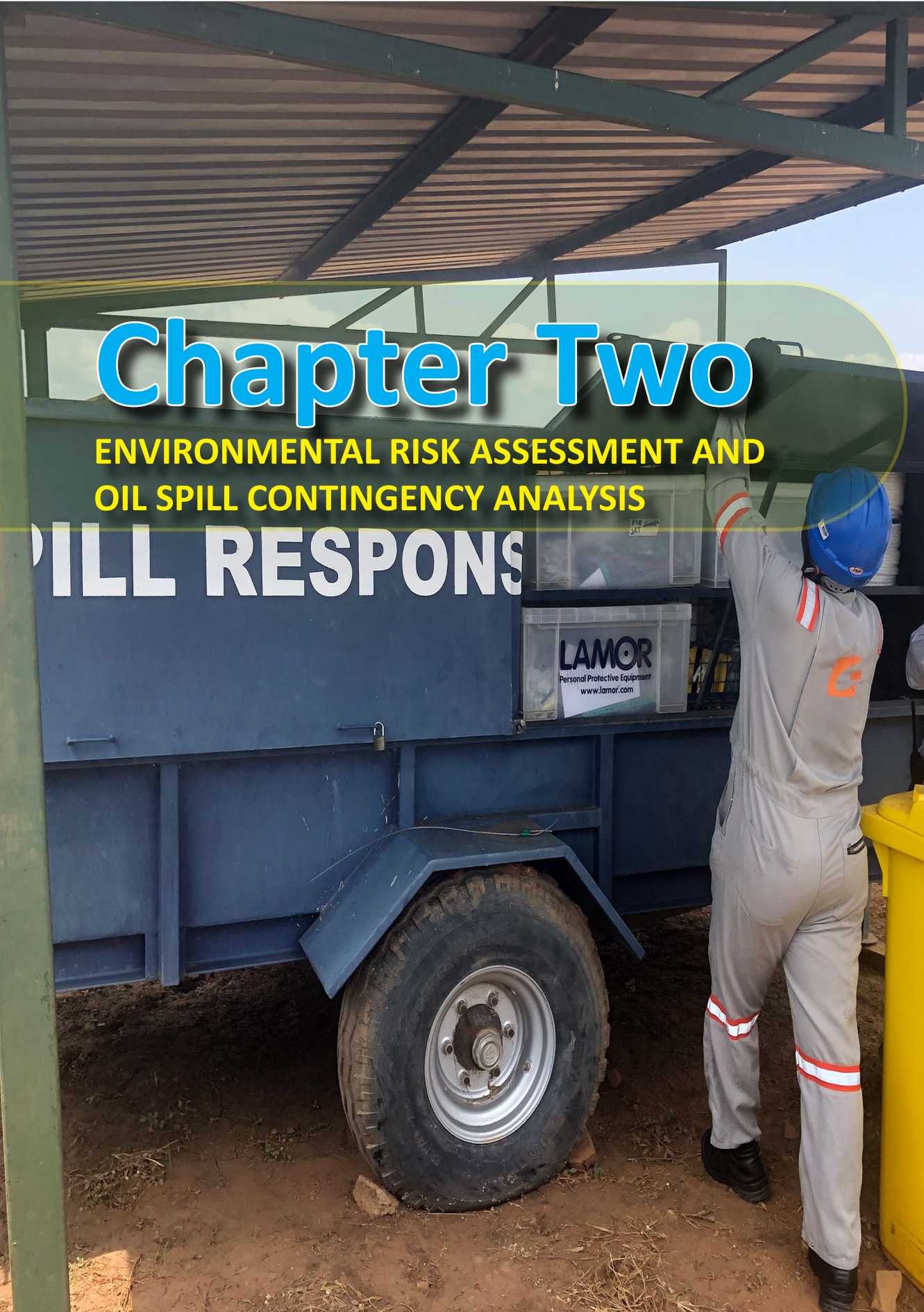
- To establish a national oil spill preparedness and response mechanism to address the risks and vulnerabilities identified in the Environmental Risk Assessment and the Oil Spill Contingency Analysis.
- To provide for the management of oil spills on the receiving environment in Uganda, including on land and into water bodies.
- To provide for health and safety of oil spill responders and the public during oil spill response operations.
- To establish a coordination mechanism for preparedness and response from licensees and operators, local governments, Government and other stakeholders, in order to counter the threat posed by oil spills on human health and the environment.
- To provide for regional and international collaboration on oil spill preparedness and response.
- To manage oil spills with potential transboundary impact.
- To describe a system for notification, mobilization, prompt response and

reporting of oil spills, so as to ensure coordinated and effective oil spill responses.

- To ensure up-to-date oil spill records and management systems.
- To entrench oil spill training, drills and exercises into sectoral undertakings.

1.4 Review of the Plan

This Plan shall be reviewed every five years or such lesser period as may be deemed necessary. If substantial changes are required, the review can take place as soon as the change is required. The review of the Plan may incorporate emerging risks, lessons learnt from oil spill response operations, as well as drills and exercises.



Chapter Two

ENVIRONMENTAL RISK ASSESSMENT AND OIL SPILL CONTINGENCY ANALYSIS

Chapter Two: ENVIRONMENTAL RISK ASSESSMENT AND OIL SPILL CONTINGENCY ANALYSIS

2.0 Introduction

Environmental Risk Assessment is necessary to identify the high oil spill risk areas and operations to ensure that this Plan adequately addresses those risks. Effective oil spill preparedness and response depends on accurate information, projections and forecasts that are conducted with scientific precision. To obtain this information, an Environmental Risk Assessment for the Oil and Gas Exploration in the Albertine Graben area was undertaken to provide an analysis of types and duration of impacts arising from oil spills on human health and the environment. The Environmental Risk Assessment Report of 2014 accordingly formed the basis for the National Oil Spill Contingency Analysis for the Oil and Gas Exploration in the Albertine Graben area, also concluded in 2014.

The Environmental Risk Assessment considered three major elements, namely; hazard identification, vulnerability analysis and risk analysis.

2.1 Hazard identification

The Environmental Risk Assessment identified both social and environmental risks, and developed risk scenarios some of which were later on elaborated in the National Oil Spill Contingency Analysis.

The selected risk scenarios elaborated in the National Oil Spill Contingency Analysis included:

- Exploration well – blowout at location,
- Interconnecting infrastructure – Central Processing Facility to Refinery pipeline rupture,
- Interconnecting infrastructure – Central Processing Facility to Refinery – Overturning truck,
- Refinery – fire-crude storage leakage,
- Interconnecting infrastructure – Refinery to refined products storage hub – Product pipeline rupture.

A detailed analysis of the selected risk scenarios is contained in the National Oil Spill Contingency Analysis, which is a distinct document separate from this Plan.

2.2 Vulnerability analysis

A vulnerability analysis was conducted to enable planners to determine the

vulnerability of the environment and communities that could be affected in the event of an oil spill.

The environmental vulnerabilities and their potential for exposure as detected in the Environmental Risk Assessment were elaborated in the Oil Spill Contingency Analysis. These vulnerabilities included; soil living organisms, plants, birds, mammals and pelagic organisms (fish, plankton). Effects on ecological processes and after human exposure were also assessed.

Picture 1: Coexistence of Petroleum exploration activities with wildlife in the Murchison Falls National Park

2.3 Risk analysis

A risk analysis was carried out to identify the high-risk areas and high-risk operations, in order to put in place measures to ensure that those risks are adequately addressed. The risk analysis focused on the preparedness of the licensees and operators, local governments, Government and other stakeholders to reduce the consequence of oil spills of any magnitude (whether small or large).

For purposes of the risk analysis, the risks were categorized as follows:

- Worst case scenario (very low probability and very high consequence)– to be closely observed and mitigation measures are required in anyevent.
- Red incidents (high risk) - risk mitigating measures are required.

- Yellow incidents (medium risk) - risk mitigating measures should be considered.
- Green incidents (low risk) - risk mitigating measures are not required.

2.4 Contingency analysis

The National Oil Spill Contingency Analysis (NOSCA):

- Analysed response alternatives and necessary resources to handle identified oil spill scenarios.
- Recommended possible strategies for organising oil spill response resources.
- Recommended requirements for training and exercises.
- Proposed possible co-operative agreements between parties involved in an oil spill incident.

The following response tactics were identified as the most relevant for the analysed scenarios:

- Surveillance and tracking;
  - delineation and tracking on ground and water.
- Source control, containment, protection and recovery;
  - Establishment of diversion and containment structures, including pits on land.
  - Containment booming and recovery on water.
  - Diversion and exclusion booming on water.
- Clean-up and normalization;
  - Recovery prioritizing mechanical cleaning.
  - Use of absorbents for less contaminated land.
  - Storage, transfer and oil waste handling.

The detailed proposed response actions for the different scenarios are described in the National Oil Spill Contingency Analysis Report of 2014.

Chapter Three

DEFINED LEVELS OF PREPAREDNESS AND RESPONSE

3.0 Introduction

This Chapter defines the response Tiers and illustrates how they are used for purposes of planning of oil spill preparedness and response under this Plan. The chapter provides the link between the Environmental Risk Assessment (ERA), the National Oil Spill Contingency Analysis and this Plan.

3.1 Defining Tiers

Tiered preparedness and response is the basis on which to establish a robust oil spill preparedness and response framework. The established three-tiered structure allows those involved in contingency planning to describe how an effective response to any oil spill will be provided, from small operational spillages to a worst-case release on land or water. An oil spill may potentially escalate from small spill to medium spill through to large spill, requiring Tier 1, Tier 2 or Tier 3 response, respectively. The structure provides a mechanism to identify how individual elements of capability will be cascaded.

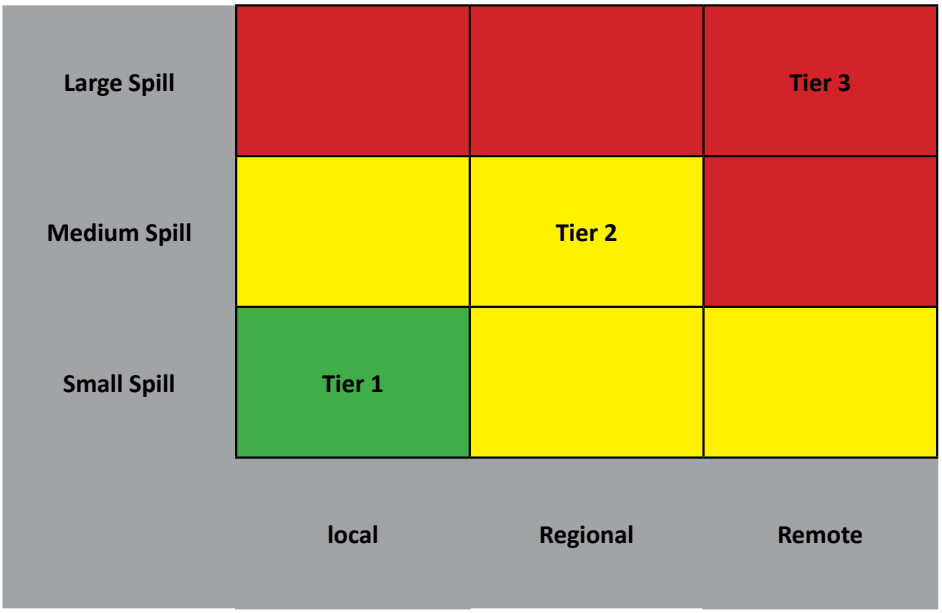


Figure 1: illustration of a Tier based response structure.

The aim of the Tiered system is to provide suitable response resources, including competent personnel, equipment and adequate financial resources, at the right place and the right time. These resources combine to establish response capability, and are categorised according to whether that capability is held locally, regionally or

internationally. This geographical distinction is at the core of the Tiered model, and enables capability to be built around the potential severity of the oil spill incident and the timeframe in which resources are needed on-scene.

The resulting response capability should;

- be commensurate to the risk assessed.
- encourage cooperation, mutual assistance and integration of shared resources.
- be fully scalable from Tier 1 to 3.
- be tested, maintained and verified as part of a defined preparedness framework.
- employ the most appropriate response options reflecting a net environmental benefit analysis.

3.2 The Tier structure for oil spill preparedness and response

The Tier structure for oil spill preparedness and response is provided here below. Understanding this structure enhances ability to respond appropriately to an oil spill.

3.2.1 Tier 1 oil spill

Tier 1 oil spills are generally related to operational activities at a fixed location or facility. Such oil spill events may result, for example, from transport incidents, over- filling of a tank or a leaking valve. In essence a Tier 1 oil spill event arises from disruptions in routine operations that typically result in small quantities of oil being spilled within the confines of a facility and having a relatively minor impact. As such, a relatively modest on-site capability is mostly sufficient for such events. In reality, however, some Tier 1 oil spill events may require a comparatively larger capability depending on the factors that may influence the scenarios that develop.

3.2.2 Tier 2 oil spill

Tier 2 oil spills are relatively large spills beyond the remits of a defined Tier 1 capability. Tier 2 oil spill require additional resources from a variety of potential sources and may require a broader range of stakeholders to be involved in the oil spill response. By the very nature and variety of circumstances that may arise, including the severity and intensity of the oil spill, Tier 2 oil spill events cannot be characterised simply in terms of the volume of oil spilled. Other considerations include environmental sensitivity of the area, national and cultural heritage and whether the affected area is a Protected Area.

Tier 2 scenarios can develop in a number of ways, including:

- A spill which moves beyond the geographical remit of any local Tier 1.

- A Tier 1 oil spill event growing in scale and severity such that a Tier 1 capability is overwhelmed.
- The scale and severity of a Tier 1 oil spill event not being entirely clear and, as a result, Tier 2 resources potentially being needed as a precautionary measure.
- A spill that may occur in sensitive areas, protected areas and fragile ecosystems.
- An event being initially classified as Tier 3 oil spill, but as the situation develops, it becomes clear that a Tier 2 oil spill response capability is sufficient.
- A major event where Tier 2 oil spill capability is mobilized prior to the arrival of Tier 3 oil spill response resources.

3.2.3 Tier 3 oil spill

A Tier 3 oil spill is classified as one which, due to its scale and likelihood to cause major consequences, calls for substantial further resources from a range of local, national and international sources.

Tier 3 oil spill scenarios can develop in a number of ways, including:

- Where an oil spill is likely to have grave impacts to human health or the environment.
- Where an oil spill is likely to have transboundary impacts.
- here Tier 2 response resources are insufficient.

3.3 Responsibility for Tier 1, Tier 2 and Tier 3 preparedness and response

The licensees and operators are responsible for Tier 1, Tier 2 and Tier 3 preparedness and response and are required to have sufficient resources to handle the related oil spills. Each facility would have to conduct an environmental risk assessment of their operations and design their response capability accordingly.

With particular reference to Tier 2 and Tier 3 oil spill response, however, licensees and operators may request for cooperation from other licensees and operators. They may also request for additional response resources from local governments and the Government. In specific circumstances, Government may consider taking over response operations in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. Nevertheless, even when the Government takes over response operations, the licensee, operator, or other person responsible for the oil spill remains liable for the consequences and costs related to the response by Government. The responsible person must continue with their response efforts under the National Incident Command structure of Government set out in ***chapter 4.***

Chapter Four

NATIONAL OIL SPILL PREPAREDNESS AND RESPONSE SYSTEM

4.0 Introduction

Comprehensive and coordinated preparedness and response is crucial for effective management of oil spills. This requires a well-established organisational structure, and seamless integration of appropriate equipment, resources and competent personnel from different organizations, as well as proper training, drills and exercises.

This Chapter provides an overview of the organizational structure for the National Oil Spill Preparedness and Response System in accordance with the National Environment Act, 2019 and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020. It further defines linkages between different structures in the system and outlines roles within those structures. Training, drills and exercises for oil spill response are covered in ***chapter 12.***

4.1 Office of the Prime Minister

The Office of the Prime Minister, through the department responsible for disaster preparedness and management, is responsible for the operational coordination of a national oil spill response in accordance with the National Policy for Disaster Preparedness and Management, 2011, the National Environment Act, 2019 and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. The Office of the Prime Minister shall undertake its role in collaboration with the Competent National Authority (Petroleum Authority of Uganda), the National Environment Management Authority and relevant lead agencies. In particular, the Office of the Prime Minister shall ensure that the National Emergency Coordination and Operations Centre (NECOC) whose functions are outlined in section 4.5 below, is able to perform its functions for oil spill response. The Office of the Prime Minister is required to coordinate the strengthening of national capacity to prevent, control, combat and mitigate oil spills and related impacts.

Various functions under the Office of the Prime Minister will need to be activated for oil spill preparedness and response. These functions include those itemized below.

4.1.1 Finance, procurement and administration function

One of the key roles of the Office of the Prime Minister in oil spill response will be to provide the finance, procurement and administration function.

This function is important to:

- Provide financial controls for the response.

- Support contracting and procurement.
- Ensures preparation of daily personnel and equipment time recording documents and compliance with the time policy.
- Track all expenditures and recording of costs for response personnel, equipment and assets.
- Manage claims and expenses associated with the oil spill response.
- Account for reimbursements during an oil spill response.

To undertake the finance, procurement and administration function, the respective head or officer in charge shall:

- Manage all financial aspects of an oil spill incident.
- Establish proper financial controls for the oil spill incident response operations.
- Provide financial and cost analysis information for the oil spill incident.
- Participate in development of an Incident Action Plan and briefings as required.
- Ensure that all personnel time records are accurately completed.
- Review operational plans and provide alternatives to these plans as appropriate.
- Oversee administration of vendor contracts, and service and equipment rental agreements.
- Work with the legal experts, licensees and operators on insurance coverage and exclusions, claims management processing, and approach to settlements.
- Provide financial input to demobilization planning.

Claims for damage to property, business disruption or other issues such as health or medical claims, are the responsibility of the licensee, operator or any other person responsible for the oil spill. Such claims shall be handled in accordance with ***Chapter 11***.

4.1.2 Functions of the department responsible for disaster reparedness and management

The department responsible for disaster preparedness and management in the Office of the Prime Minister shall provide guidance to the National Emergency Coordination and Operations Centre in respect to oil spill response. For that purpose, the department will make use of its following functions;

4.1.2.1 Disaster Preparedness

This function enables early warning and planning for oil spill response. This will include undertaking risk, hazard and vulnerability assessment and profiling for purposes of generating early warning for oil spill response. Tool and modalities for this function

will be detailed in an operational guideline developed by the department responsible for disaster preparedness and management in the Office of the Prime Minister.

The Planning function for disaster preparedness is required to establish a meeting structure for the oil spill response operation, including internal meetings for the oil spill incident response team and meetings with external partners, in consultation with the National Incident Commander. Specific aspects of the planning function include strategic and response planning, research and documentation, and resource mobilisation

4.1.2.2 Disaster Management

Under this function, the department responsible for disaster preparedness and management shall provide for operations and logistics requirements throughout the oil spill response.

The operations function shall be responsible for all tactical response operations throughout the oil spill response incident, to achieve key priorities such as safety, oil spill response and the protection of the environment and property.

The logistics function shall provide resources, services and support to the incident response effort in the form of personnel, facilities and materials. Specific functions under the broader function of disaster management for oil spill response will be detailed in an operational guideline developed by the department.

4. 2 Competent National Authority (Petroleum Authority of Uganda)

The central role of the Petroleum Authority of Uganda as the Competent National Authority is to ensure the implementation of this Plan, in particular by way of national oil spill planning and preparedness. For this purpose, the Petroleum Authority of Uganda shall ensure the timeliness and operability of the National Oil Spill Contingency Plan.

The Petroleum Authority of Uganda will collaborate with the Office of the Prime Minister, the National Environment Management Authority, relevant lead agencies, licensees, operators, civil society and other key stakeholders to implement this Plan. The functions of the Competent National Authority are set out in the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020.

When the Petroleum Authority of Uganda, in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020, determines that Government should take over the command of an oil spill response

operation, it shall communicate with the Office of the Prime Minister to activate the national oil spill response under this Plan.

The Petroleum Authority of Uganda may, in accordance with the Petroleum (Exploration, Development and Production) Act, 2013 and the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013, require a licensee or operator to obtain financial security. This is a safeguard against potential oil spills that may be deleterious to the environment or may cause grave harm to the environment, or in the event of bankruptcy of the person responsible for the oil spill.

4.3 National Environment Management Authority

The National Environment Management Authority will be required to provide guidance on environmental considerations related to oil spill preparedness and response to the Office of the Prime Minister, the Petroleum Authority of Uganda, relevant lead agencies, licensees and operators, in accordance with the National Environment Act, 2019 and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. The National Environment Management Authority shall execute this role in addition to the functions mentioned in ***Chapter 1.1.***

4.4 Lead Agency responsible for the downstream petroleum sector

There are roles apportioned to a lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or for operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013. These roles shall be undertaken in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. For the respective sector, the lead agency shall liaise with operators to establish specific standard operating procedures for the management of oil spill incidents by that sector.

The lead agency will also be required to collaborate with the National Environment Management Authority and the Competent National Authority to ensure that the respective sector undertakes regular oil spill response training, drills and exercises. The lead agency shall also ensure that personnel that may be involved in an oil spill response operation are trained and are competent.

Where the oil spill is feared to cascade into a Tier 3 oil spill, the lead agency has the responsibility to inform the Competent National Authority and the National Environment Management Authority in order to activate Government oil spill response.

4.5 National Emergency Coordination and Operations Centre

The National Emergency Coordination and Operations Centre (NECOC) under the department responsible for disaster preparedness and management in the Office of the Prime Minister, will provide the incident command structure for national oil spill preparedness and response, in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020. When responding to an oil spill, the department responsible for disaster preparedness and management shall ensure that the incident command structure includes the National Environment Management Authority, the Petroleum Authority of Uganda, the lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 and other relevant lead agencies, as well as the licensees and operators.

4.5.1 Functional structure of the National Emergency Coordination and Operations Centre for purposes of national oil spill response

The organizational structure of the National Emergency Coordination and Operations Centre for purposes of oil spill response shall be the National Incident Command. Operational aspects relevant to oil spill response are embedded in the institutional structure of the Office of the Prime Minister and its department responsible for disaster preparedness and management, as indicated in *4.1 above*. The organizational structure is illustrated in *Figure 2 below*.

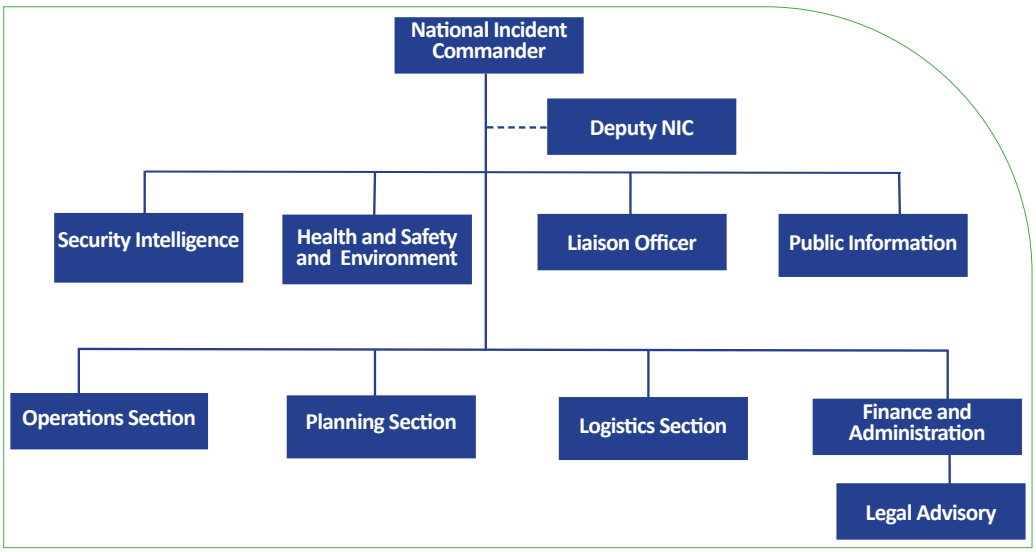


Figure 2: Organizational structure of the National Emergency Coordination and Operations Centre

4.5.1.1 National Incident Command

The National Incident Command represents a function, not a physical person. The

Command function is carried out by a National Incident Commander who performs the duties exclusive to the National Incident Command. The Prime Minister shall grant the National Incident Commander full authority in liaison with the National Environment Management Authority and the Petroleum Authority of Uganda, to manage the oil spill response under the National Emergency Coordination and Operations Centre, supervised by the department responsible for disaster preparedness and management.

The National Incident Command shall follow the principle of 'prudently over-responding', which requires the exercise of prudence and diligence in responding to an oil spill incident, to ensure that the response can be safely and effectively managed, including by follow-up. Throughout an incident, the National Incident Commander shall be required to determine the size of the National Incident Command Structure needed to respond to an oil spill incident.

Licensees, operators, lead agencies and other stakeholders should cooperate and support the function of the National Incident Command when activated.

4.5.1.2 Responsibilities of the National Incident Commander

The National Incident Commander shall be a high-ranking Government officer, and shall be responsible for strategic guidance of the National Incident Command function.

The National Incident Commander shall, among other functions:

- Assume and announce Command.
- Establish an Oil Spill Incident Command Post.
- Possess clear authority to manage the response.
- Ensure safety of incident responders and the public.
- Establish incident response objectives and strategies to be followed.
- Establish immediate priorities.
- Initiate, maintain and control the communications process within the National Incident Command Structure.
- Oversee the establishment of the size of the National Incident Command Structure needed and monitor its effectiveness.
- Assess the status of the response and submit status reports to the relevant authorities.
- Approve, implement, and evaluate the Incident Action Plan.
- Coordinate activity for all Command and General Staff.
- Request for the release of resources and any additional resources that may be required.
- Coordinate the use of volunteer and auxiliary personnel.
- Authorize the release of information through the Public Information Office by whatever name called.

- Order demobilization of the incident when appropriate.
- Ensure completion of post incident reports and accountability of resources.

The Office of the Prime Minister may, as appropriate, designate a Deputy National Incident Commander to perform tasks assigned by the National Incident Commander, to provide relief for the National Incident Commander, or to represent an organization that is providing significant assistance in the response. Personnel considered for the position of Deputy National Incident Commander should have qualifications equivalent to those of the National Incident Commander, and should be ready to assume the position of National Incident Commander at any time.

4.5.1.3 National Incident Command Staff

Incident Command represents the first organizational element established for any incident. The national Incident Command Staff shall perform or support the duties and responsibilities of the Command function.
The size of the National Incident Command and functional sections within the Command will depend on the complexity of the oil spill incident, the number, type and scope of operations being conducted, and the types of support functions required.
The vast majority of Tier 2 and Tier 3 oil spill incidents where Government›s involvement may be needed, will normally require only a small National Incident Command Structure, often consisting of a National Incident Commander supervising a few resources. In those instances, the National Incident Commander may have sufficient time to single-handedly carry out tasks such as information dissemination, safety monitoring, coordination of participating organizations, and resource monitoring. Full deployment of the National Incident Command functional structure may be rare and is generally reserved for large, complex Tier 3 oil spill incidents.

For large-scale oil spill incidents, as the complexity of an incident increases, the role of the National Incident Commander evolves from hands-on activities to overall incident management and command. As a result, the National Incident Commander may designate one or more Command Staff positions to perform various management activities. Depending on the nature and complexity of the incident, the National

Incident Commander may also assign functions such as the Health and Safety function, Legal function and Intelligence/Security function. If required, the National Incident Commander may, with the approval of the Prime Minister, add other Incident Command functional positions which will report directly to the National Incident Commander.

The functional areas under the National Incident Command are indicated below;

4.5.1.4 Health and Safety function

The purpose of the Health and Safety function is to protect emergency responders, oil spill incident victims and the public. This function is also charged with the responsibility of coordinating minimisation of impacts of the oil spill incident on the area surrounding the scene, and maximizing the response effort, while using resources efficiently.

The incident commander shall designate a health and safety officer and a supporting team, with necessary skills for health and safety management. The team responsible for health and safety management shall concentrate on broader issues such as monitoring and maintaining awareness of active and developing situations, assessing hazardous and unsafe situations and developing measures to ensure health and safety of personnel. The incident commander shall seek the services of the Ministry responsible for health and ensure first-aid and medical facilities, paramedics, nurses and physicians and other relevant personnel are provided.

In respect to an oil spill in a Protected Area or Conservation Area, expert advice from Uganda Wildlife Authority, the National Forestry Authority or other relevant institutions should be obtained where operations involve danger to and from wildlife. The health and safety officer shall prepare a health and safety plan that shall include; evaluation of toxicity, fire and explosion hazard assessment, operational safety, personal protective equipment, site security and personal safety responsibilities, task- specific fitness requirement, site-specific health surveillance requirements and the likelihood of exposure to health hazards, pre-operations health and safety conference for all incident participants and decontamination. Health and safety measures should be communicated to all personnel involved in and affected by the oil spill response operation.

4.5.1.5 Legal function

An oil spill incident might affect the rights of people, human health and the environment. Hence, in responding to an oil spill, the Office of the Prime Minister should have regard to national laws, applicable national, regional and international standards and other instruments.
The Office of the Prime Minister may obtain further legal advice from the office of the Solicitor General and effect or cause to be effected such legal remedies as may be necessary.

4.5.1.6 Intelligence/Security function

Security risks shall be assessed during planning and execution of oil spill response operations. Security risks in oil spill response operations include terrorism, sabotage, civil unrest, unexploded ordinances, hijack/kidnaps, among others.

The National Incident Commander shall designate a security coordinator to assess

the security risks associated with oil spill response activities. The Security coordinator should liaise with relevant security agencies to ensure that measures are implemented to address security concerns during oil response operations.
It may be advisable to couple health, safety and intelligence/security matters in one plan for purposes of effective coordination of an oil spill response, in accordance with applicable law.

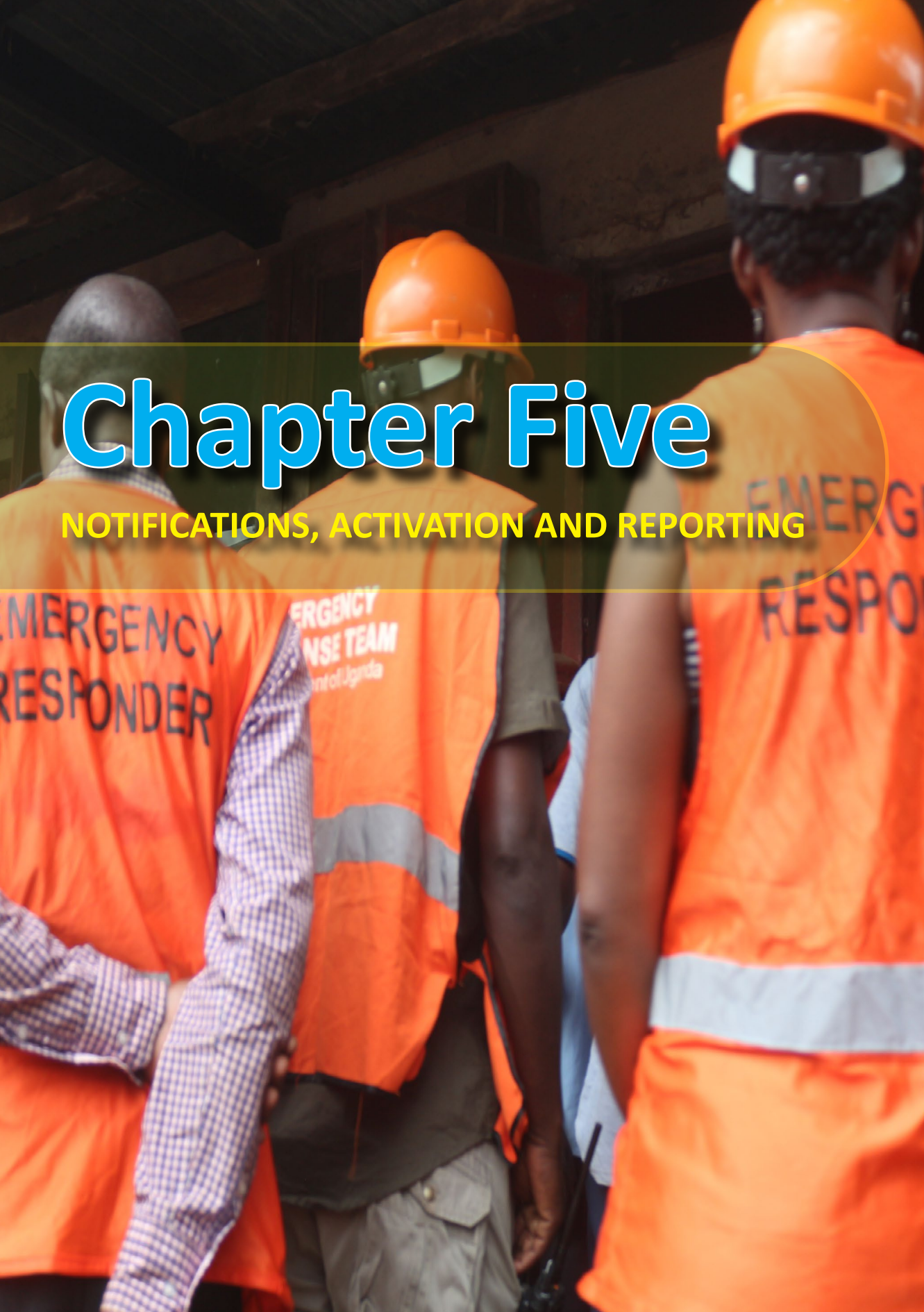
4.6 Incident action plan

The licensees and operators are required to establish an Incident Action Plan to guide their response operations.
Where Government takes over an oil spill response operation, the National Incident Commander shall establish and maintain an Incident Action Plan. The Incident Action Plan developed by the National Incident Commander may, where applicable, build on the initial Incident Action Plan developed by the licensee, operator or other person responsible for the oil spill.

The Incident Action Plan shall:

- Describe the overall objectives and strategies for managing the response.
- Describe response tactics and activities for a set length of time known as the operational period, to ensure that all responders and response organizations work in coordination.
- Identify operational resources.
- Provide for a documented record of work assignments, priorities, safety and environmental considerations and other important management information

Picture 2: The National Emergency Coordination and Operations Centre (NECOC)



Chapter Five

NOTIFICATIONS, ACTIVATION AND REPORTING

5.0 Introduction

This Chapter details the required notifications, responsibilities and reporting procedures related to an oil spill incident or imminent threat of an oil spill. Prompt and accurate notifications and subsequent reporting are crucial to the success of oil spill response operations.

5.1 Notification of an oil spill or imminent threat of an oil spill

In the event of an oil spill or imminent threat of an oil spill, the person responsible for the oil spill is required to immediately notify the Petroleum Authority of Uganda and where applicable, the relevant local government. This notification should be in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 and other applicable laws.

A subsequent notification confirming the first information and giving further details, shall be made to the Petroleum Authority of Uganda using the form set out in Appendix 3, as much as possible stating accurate information. The Petroleum Authority of Uganda shall maintain a 24-hour watch to receive and manage oil spill notifications. Any other person who discovers an oil spill or an imminent threat of oil spill, shall notify the Police and where possible the Petroleum Authority of Uganda. When the Police receive the notification, they will transmit the information to the Petroleum Authority of Uganda, the Office of the Prime Minister through the department responsible for disaster preparedness and management, the National Environment Management Authority and the relevant local government, as appropriate. The timeframes involved will be set out in the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 and other applicable laws.

When the Petroleum Authority of Uganda is notified, it shall immediately and accurately evaluate the potential of the oil spill, and where necessary, notify the Office of the Prime Minister through the department responsible for disaster preparedness and management. The Petroleum Authority of Uganda will also be required to notify the National Environment Management Authority and a relevant lead agency.

The notification procedures above apply also in the event of an oil spill from operations or facilities covered by the Petroleum Supply Act, 2003 or operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

Where the notification is to a lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion,

Transmission and Midstream Storage) Act, 2013, that lead agency shall subsequently notify the National Environment Management Authority. The National Environment Management Authority may then, in consultation with the Competent National Authority, request the Office of the Prime Minister to take over command of the oil spill response operations.

In the event of an oil spill likely to have transboundary effects, the Office of the Prime Minister in collaboration with the Ministry of Foreign affairs shall notify the countries that might be affected by the oil spill in accordance with applicable international laws and agreements. The Government shall put in place a cooperative framework with the neighbouring countries for preparedness and response to oil spills in neighbouring countries that affect or are likely to affect Uganda.

5.2 Activation of response

Following an oil spill incident, the person responsible for the oil spill shall immediately activate their oil spill preparedness and response system, in accordance with Tiered response outlined in Chapter Three and Table 1.

Table 1: Oil spill incident notification, response and reporting requirements.

Type of oil spill	*Responsibility*	*Resources*	*Notification and reporting requirements*
Tier 1 oil spill (including imminent threat thereof)	Response will be controlled by the licensee, operator or other person responsible for the oil spill in accordance with their own site-specific spill control management plan.	Licensee/ operator-owned oil spill combating equipment.	a). Immediately notify the Petroleum Authority of Uganda. b). Within 24 hours of occurrence of the oil spill, submit to the Petroleum Authority of Uganda the oil spill Notification Form in Appendix 3

Tier 2 oil spill (including imminent threat thereof)	Response will be initiated by the licensee, operator or other person responsible for the oil spill, by controlling the source of the spill and undertaking the oil spill response.	Licensee/ operator-owned oil spill combating equipment. Available industry resources.	a). Immediately notify the Petroleum Authority of Uganda and the relevant local government, as appropriate.
	Support of other licensees and operators and of local government or other lead agencies may be sought. Government support may be requested in the oil spill response management in accordance with this Plan	Resources of local governments and other lead agencies.	b). Within 24 hours of the occurrence of the oil spill, report to the Petroleum Authority of Uganda using the Oil Spill Notification Form in Appendix 3.
Tier 3 oil spill (including imminent threat thereof)	Response to be initiated by the licensee, operator or other person responsible for the oil spill, by controlling the source of the spill and undertaking the oil spill response. Support of other licensees and operators and of local government and other lead agencies may be sought. Government support may be requested in the oil spill response management in accordance with this Plan Government may consider taking over the management of the oil spill response in accordance with this Plan, in collaboration with the licensee, operator and other person responsible for the oil spill, and with international assistance as necessary.	Licensee, operator-owned oil spill combating equipment. Available industry resources. Government and other national resources. International resources as appropriate	a). Immediately notify the Petroleum Authority of Uganda. b). Within 24 hours of the occurrence of the oil spill, report to the Petroleum Authority of Uganda using the Oil Spill Notification Form in Appendix 3. c). In accordance with international law and procedure, notify countries that might be affected by the oil spill.

These notifications apply also in respect of notifications to a lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or persons responsible for operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

5.3 Oil spill management updates

After initial notification and activation of the oil spill response, the licensee and operator is required to send an update to the Petroleum Authority of Uganda, where—

- information given in the initial notification is incomplete or inaccurate;
- new information about an oil spill becomes available; or
- regular updates of the status of the oil spill are necessary.

The Petroleum Authority of Uganda will determine the frequency of updates on the oil spill by the licensee or operator, depending on the source and nature of the oil spill and the potential impacts on human health and the receiving environment.

In responding to Tier 1 or Tier 2 oil spill incidents, the Petroleum Authority of Uganda shall subsequently update relevant lead agencies and other stakeholders, including local government as appropriate. Updates shall also be made by, or as appropriate, to a lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

In the event that Government gets involved in the oil spill response in accordance with the National Environment (Prevention, Preparedness and Response) Regulations, 2020, the National Incident Commander shall provide updates to the Office of the Prime Minister, relevant lead agencies and other relevant stake holders within his or her terms of reference.

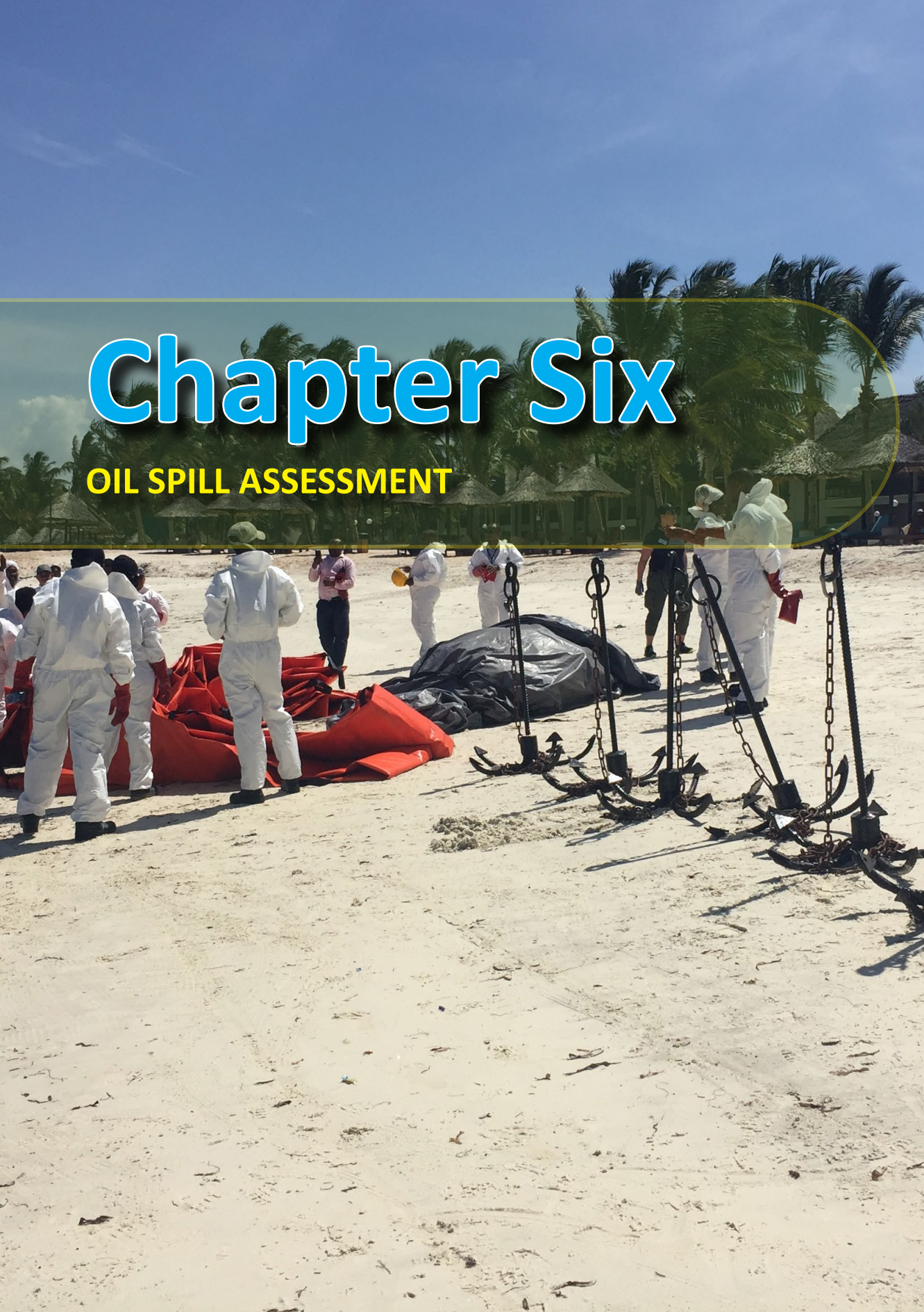
5.4 Public Information Management during and after an oil spill

In the event of an oil spill, there will be a deliberate, planned and sustained management of information that goes to the public to ensure that the risks to health and safety of the population is mitigated and managed using proactive messaging and information.

A Communication and Public Awareness Strategy for managing oil spills will be developed by a team of communications professionals from the Office of the Prime Minister, The Ministry of Information and National Guidance, The Petroleum Authority of Uganda and National Environment Management Authority, working with relevant actors outlined in this plan. The Strategy would among other things establish a crisis communication management team to advise and oversee information, public awareness and reputation management before, during and after the response to an oil spill. Necessary resources to implement the communications and public information strategy will have to be earmarked as a component of this National Oil Spill and Contingency Plan.

Chapter Six

OIL SPILL ASSESSMENT



6.0 Introduction

During an oil spill incident, immediate assessment of the oil spill by the licensee, operator and any other person responsible for the oil spill will be undertaken to determine the most appropriate response tactics and strategies. Arrangements will be made to estimate the flow rate, volume and extent of the spill, conduct a health and safety hazard assessment posed by the spilled oil, and predict the spill's probable behaviour and movement using drift or trajectory models or any other means and available meteorological and hydrographic data. Model results will be used to determine the likely spill migration path and potential impact areas, which are critical inputs in the development of response strategies.

Model results will immediately be reported to the Petroleum Authority of Uganda or as appropriate, the lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

Additionally, an oil spill surveillance and monitoring program should be implemented by licensees, operators and other persons responsible for the oil spill, in order to validate the model results and determine the actual movement, extent, and characteristics of the slick. In circumstances where Government gets involved in oil spill response, the National Emergency Coordination and Operations Centre will also undertake oil spill surveillance and monitoring. Different surveillance methods will be used for different oil spill incident scenarios, for example, vessels, helicopter surveillance, diverse satellites and cameras.

6.1 Hazard assessment

Hazard assessment describes procedures for assessing health, safety and environment hazards of an oil spill to ensure that necessary precautions are taken during response. This requires identification of relevant persons or institutions with the expertise and equipment that can be used to assess the hazards. The primary response action is to contain an oil spill and then to institute measures to mitigate it.

When an oil spill occurs, the health, safety and security of the public and oil spill responders is a serious consideration. The highest priority is to save human life and then to protect the environment and lastly to safeguard property and socio-economic interests.

Personnel responding to the oil spill can potentially be exposed to toxic and flammable

hazards. Consequently, it is important to identify the sources of the hazards and put in place the appropriate safeguards.

6.2 Spill volume and characterization

This section describes the procedures for determining or estimating the oil spill volume as well as the area covered, and physical and chemical characteristics of the spill. It further identifies the relevant stakeholders with the expertise and equipment to perform these tasks.

Where an oil spill occurs, a series of changes, collectively known as weathering, take place. Most oils will initially spread rapidly. The rate of spread will be determined by the location, type, volume and properties of the oil spill and rate of its release. A large, sudden release of oil will spread more rapidly than a slow seepage. In the longer term, the rate of spread and the thickness of the oil film in case of spill in a water body will be determined by the type of oil and other factors. The oil will spread until it thickens, depending on the pour point and viscosity of the weathered oil. As the oil spreads, the lighter fractions evaporate, causing the viscosity of the oil to increase. Evaluation of these factors, and in particular the properties of the oil which has been spilled, will have to be done in deciding the most appropriate response action in an individual case.

The licensee, operator and other person required to establish an oil spill preparedness and response system, will be required to put in place a mechanism for characterization and documentation of the oil spill, including the spill volume.

6.3 Modelling of oil spill movements

Licensees and operators shall put in place systems for modelling of the oil spill movements in collaboration with the Petroleum Authority of Uganda and the department responsible for disaster preparedness and management in the Office of the Prime Minister.

Models define the flow and spread of oil spill to the receiving environment and simulate movement and spread of contaminants on the terrestrial terrain, water surface, in the water column, in the ground and air. In addition, the models predict the paths, spread and fate of crude oil and petroleum products with time, including by spreading and evaporation on water and land. It is important to use a terrain model that integrates surface properties, local drainage patterns and topographical features to establish the flow and spread potential.

6.4 Oil spill surveillance

The licensee, operator and the Incident Commander shall ensure that a surveillance plan is developed, indicating the nature of the oil spill and describing the manner in

which surveillance will be undertaken. A surveillance team may be constituted by the responsible person and availed with appropriate surveillance equipment upon notification of an oil spill incident. This is critical for efficient response and timely mapping in the event of an oil spill, since response activities rely on knowledge regarding where the oil is located at any given time.

6.4.1 Oil spill surveillance on land

Surveillance on land is required to establish the extent of the oil-contaminated area, both on the surface and below the surface. Spilled oil is likely to spread laterally and may sink through the soil if spilled on land. Spilled oil will, with time, migrate downwards until it reaches the water table or an impermeable layer in the subsurface. Oil spread is driven by gravity, the topography of the earth surface as well as the movement of water and wind. The direction and rate of movement is controlled by the physical characteristics of the oil and temperature of the air and soil.
Delineation and mapping of land is necessary to quickly assess the spatial extent of oil on the surface and below the surface, in order to aid the response planning in the acute phase. By repeating the delineation and mapping at intervals, the direction and rate of movement of the oil spill can be established.

Typical resources for oil spill surveillance on land include Global Positioning System (GPS) devices, cameras, maps, and equipment such as stakes or marking tapes to mark the contaminated area. The comprehensive list of equipment that may be required for surveillance on land or water is contained in Appendix 5.

Special consideration and requirements for oil spill surveillance on land:

- Oil spills in forest, wetlands and other areas in onshore habitats will tend to disappear in the undergrowth and require special surveillance techniques.
- Oil spilled on porous gravel may show little surface contamination, yet sink to a flowing water table and spread over a large area.
- Oil spilled on a wetland will usually remain on the surface, floating on the water-saturated soil.
- Oil spilled on solid ground may find its way through cracks, reach the water table below, and migrate away from the surface site.
- Some heavy equipment can be difficult and challenging to transport to the affected oil spill site, and transportation such as helicopter or vehicles may be required.

6.4.2 Oil Spill surveillance on water

Oil spill surveillance on water establishes the extent of the contaminated area as well as rate and direction of movement of the spilled oil on the surface of a lake or river. Information on the position of oil slicks is critical for management of an oil spill incident. Accordingly, the command of an incident depends on efficient surveillance

of the spill.

Tracking on water is used to quickly assess the spatial extent of surface oil to aid response planning during the acute phase of the oil spill response. The oil will move and change shape and size over time, driven by wind, currents or the state of the lake or river. Weathering is caused by evaporation, dissolution, dispersion, and emulsification. The rate of weathering is dependent on the characteristics of the oil, wind, state of the lake or river, air temperature, water temperature, and exposure to sunlight.

Sensors can be used for direct and indirect identification of oil on water. The sensors can be mounted on satellite, aircraft, Unmanned Aerial Vehicles (UAVs - drones), aerostats, vessels and stationary installations offshore as well as observations from shore. The sensors may be radar, passive/active infrared (IR), ultraviolet (UV), Side Looking Airborne Radar (SLAR), Forward Looking Infrared (FLIR) cameras, as well as visual identification.

Typical resources for surveillance on water include vessel, aircrafts or satellite mounted sensors or manually operated equipment such as Global Positioning Systems, cameras and maps. To track the movement of oil, tracking buoys may be used. Manual observation alongside lakeshores and/or riverbanks is also a possibility. Effective spill surveillance on water is dependent on availability of infrastructure, logistics and access to airstrips.

Picture 3: Lake Albert shoreline Assessment at Kingfisher Development Area

6.5 Initial oil spill monitoring

The results of the oil spill surveillance should form the basis for initial monitoring of the impacts of the oil spill on the receiving environment. Special attention should be paid to the spread of oil to environmentally sensitive and vulnerable areas, including habitats for migratory species, areas for natural and cultural heritage, and human settlements. The National Environment Management Authority, the Uganda Wildlife Authority, the National Forestry Authority and other government agencies responsible for conservation areas and Protected Areas should be consulted.

Picture 4: Boat which can be used in oil spill response operations

Chapter Seven

RESPONSE RESOURCES

Chapter Seven: RESPONSE RESOURCES

7.0 Introduction

This chapter highlights the need for quick access to response resources which are critical in minimizing oil spill impacts and implementing an effective response. It provides a summary of the response resources that may be required during an oil spill response in Uganda. Response resources shall be categorized by Tier.

Licensees and operators are responsible for providing resources for oil spill response. Licensees or operators may combine resources aimed at providing effective response to an oil spill, through the formation of a mutual response body to support oil spill response activities. The licensees and operators may obtain supplementary assistance from regional or international oil spill response service providers.

The resources of licensee and operators may, in exceptional circumstances, be supplemented with Government resources, including assistance from regional, international and other stakeholders. Response equipment shall be operated by dedicated personnel.

7.1 Tier response approach

The response resources required for each incident are influenced by a number of factors such as location, oil type, season and volume spilled. The three Tiers shall be used to define the resources required and available to respond to the incident. The Tiered preparedness and response is described in detail in chapter 3 of this Plan.

There must be sufficient capacity to mobilise equipment to respond to an oil spill. This is the responsibility of the licensees, operators, the Petroleum Authority of Uganda and the Office of the Prime Minister. Equipment mobilization is also required of a lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

Appendix 4 provides a list of some of the equipment that may be required for Tier 1, Tier 2 and Tier 3 oil spill response operations.

7.1.1 Tier 1 response resources

Tier 1 is the lowest response level. It requires resources to be readily available

locally or near the oil spill incident site so that they can be deployed as quickly as operational circumstances allow. Tier 1 is site-specific and licensees, operators and other responsible persons are expected to be able to provide a full response to oil spill incidents on their sites with planned resources described in their respective oil spill contingency plans.

7.1.2 Tier 2 response resources

Tier 2 oil spills are small or medium-sized spills which may have significant impacts on human health, environment and economic activities. The licensee and operator responsible for an oil spill is expected to have the capability to mobilise and apply response resources immediately.

For a larger spill incident where the responsible person's resources may be insufficient to deliver a proper response, the person responsible is expected to mobilise support from other licensees and operators, in which case a joint oil spill response by the licensees and operators will be undertaken. In some circumstances, support from government institutions, regional and international sources may be required for adequate oil spill response. In that case, immediate mobilisation of resources is required upon notification of an oil spill. The response under this Tier should be continuous until the oil spill is contained and clean-up operations demobilized.

7.1.3 Tier 3 Response resources

Tier 3 oil spills are normally major spills requiring substantial response resources. Licensees and operators involved in petroleum activities, midstream operations and petroleum supply are required to have membership with suitable Tier 3 oil spill equipment service providers that can mobilise equipment into the country within the shortest time possible after the occurrence of an oil spill.

Where Government involvement in Tier 3 response is required, the Government should ensure that adequate oil spill response resources can be mobilised to respond. For this purpose, the Government may require resources belonging to any person in Uganda including the licensee, operators and other private sectors, local governments and other lead agencies to be available. The Government may also request regional and international assistance to mitigate effects perceived to be wide-reaching, and of national or international significance.

7.2 Final selection and type of equipment

The final selection and type of equipment can be adjusted to local conditions, culture and availability, such as a high input of manual labour and locally produced

equipment including dry grass, sand bags, wood, rocks shovels, wire mesh and nets. The implementation of an oil spill response capacity with efficient and relevant equipment is also a part of the process of establishing credibility with local, national and international stakeholders.

The type and number of this equipment as well as the readiness and training level of the personnel involved in the management of the equipment can be specified after clarification of roles, responsibilities and tier structure have been established by the licensee, operator and the Government. This would allow for a considerable first effort and time to establish supply of additional resources, if required.

7.3 Support services

Effective deployment and utilisation of response resources is dependent on the calibre of human resources and support services such as medical, transportation, volunteer management, weather and scientific support.

The Government is required to put in place measures for the expeditious reception and support of personnel and equipment from other countries. This includes overcoming delays in immigration, customs and flight clearance.

Table 2: Competencies relevant to oil spill preparedness and response and the relevant government institutions

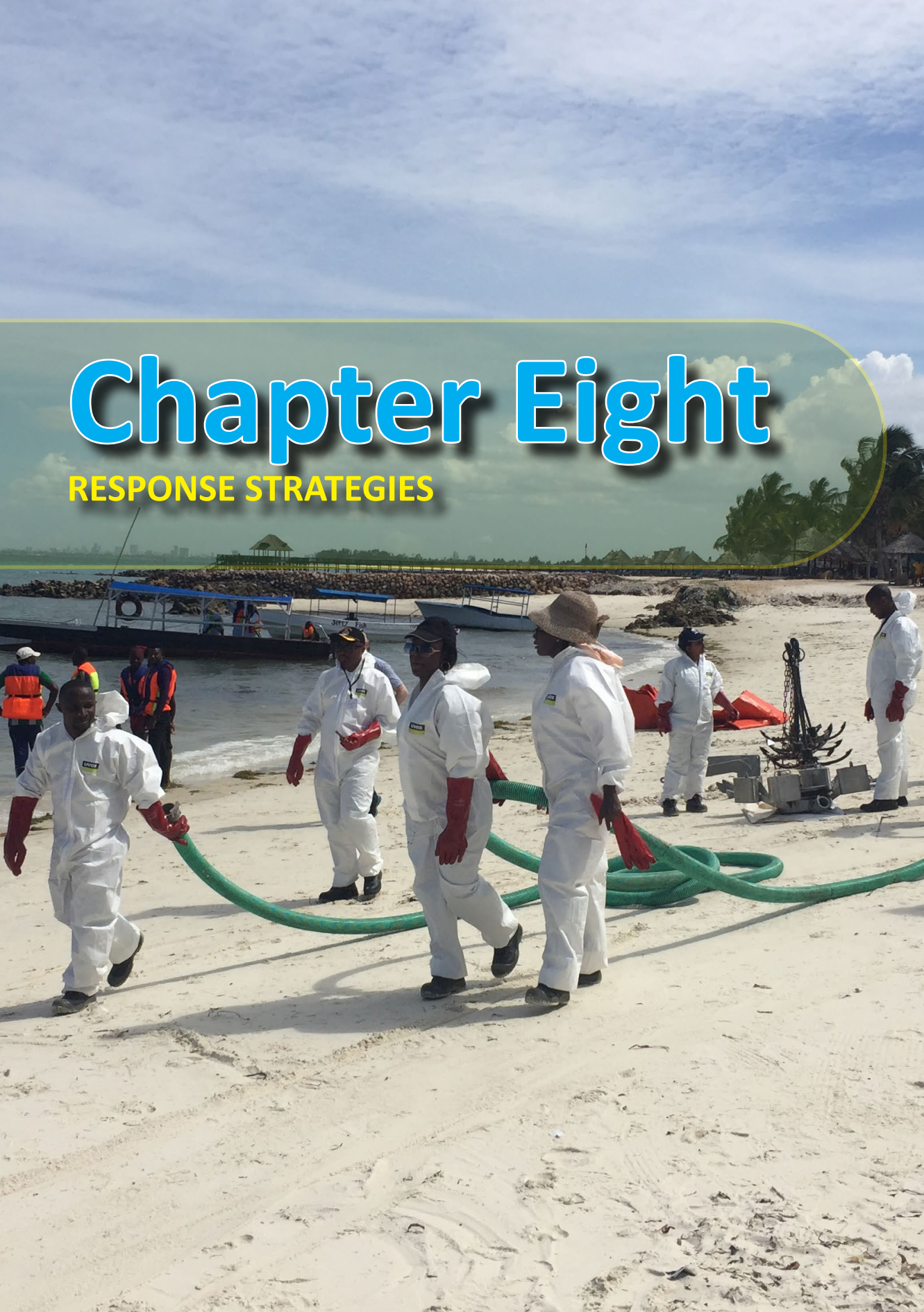
Knowledge and skills	*Government institution*
Oil spill response strategies	i. Office of the President ii. Office of the Prime Minister - Disaster Preparedness and Management Department iii. Ministry of Energy and Mineral Development iv. Petroleum Authority of Uganda v. National Environment Management Authority
Health, safety and security	i. Office of the Prime Minister – Disaster Preparedness and Management Department ii. Ministry of Defence and Veteran Affairs iii. Uganda Peoples' Defence Force iv. Ministry of Internal Affairs v. Ministry of Gender, Labour and Social Development vi. Ministry of Health vii. Petroleum Authority of Uganda viii. Uganda Wildlife Authority

Petroleum and environment science	i. Ministry of Energy and Mineral Development ii. Ministry of Water and Environment iii. Petroleum Authority of Uganda iv. National Environment Management Authority v. Uganda Wildlife Authority vi. National Forestry Authority
Waste management	i. Office of the Prime Minister – Disaster Preparedness and Management Department ii. National Environment Management Authority iii. Local Governments and other lead agencies iv. Petroleum Authority of Uganda v. Ministry of Energy and Mineral Development
Fisheries management	i. Ministry of Agriculture, Animal Industry and Fisheries ii. National Environment Management Authority iii. Local governments and other lead agencies
Land use and planning	i. Ministry of Lands, Housing and Urban Developmen ii. Local governments and other lead agencies
Legal	i. Ministry of Justice and Constitutional Affairs ii. Relevant lead agencies
Customs and immigration Arrangements	i. Ministry of Internal Affairs ii. Uganda Revenue Authority
Oil spill monitoring	i. Office of the Prime Minister – Disaster Preparedness and Management Department ii. Civil Aviation Authority iii. National Environment Management Authority iv. Petroleum Authority of Uganda v. Ministry of Energy and Mineral Development vi. Uganda Peoples' Defence Forces vii. Uganda Police Force viii. Local governments
Meteorology	i. Ministry of Water and Environment ii. Uganda National Meteorological Authority

Logistics	i. Office of the President ii. Office of the Prime Minister – Disaster Preparedness and Management Department iii. Ministry of Defence and Veteran Affairs iv. Ministry of Internal Affairs v. Ministry of Foreign Affairs vi. Ministry of Finance, Planning and Economic Development vii. Ministry of Energy and Mineral Development viii. Ministry of Works and Transport ix. Ministry of Information, Communications Technology and National Guidance x. Ministry of Health xi. Civil Aviation Authority xii. Local governments and other lead agencies
Communications	i. Ministry of Information, Communications Technology and National Guidance ii. Ministry of Internal Affairs iii. Uganda Communication Commission iv. Uganda Media Centre
Transboundary matters	i. Ministry of Foreign Affairs ii. Office of the Prime Minister iii. Ministry of Defence and Veteran Affairs iv. Ministry of East African Community Affairs v. Lake Victoria Basin Commission vi. Nile Basin Initiative vii. Great Lakes Commission
Training and exercises	i. Office of the Prime Minister – Disaster Preparedness and Management Department ii. Ministry of Defence and Veteran Affairs iii. Uganda Peoples' Defence Forces iv. Uganda Police Force v. National Emergency Coordination and Operations Centre vi. Petroleum Authority of Uganda vii. Ministry of Energy and Mineral Development viii. National Environment Management Authority ix. Local governments and other lead agencies
Security	i. Office of the Prime Minister – Disaster Preparedness and Management Department ii. Ministry of Defence and Veteran Affairs iii. Ministry of Internal Affairs iv. Uganda People's Defence Forces v. Uganda Police Force

Chapter Eight

RESPONSE STRATEGIES



8.0 Introduction

This Chapter highlights feasible response strategies, including monitoring and evaluation, containment and recovery techniques. The strategies may have to be adaptable to different locations, under different conditions and at varying times of the year and must be established by licensees, operators and the National Emergency Coordination and Operations Centre.

The response strategies prepared by the National Emergency Coordination and Operations Centre shall be in consultation with the licensees, operators, the person responsible for the oil spill, the Petroleum Authority of Uganda and the National Environment Management Authority. Also to be consulted are; the lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or persons responsible for operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013, other relevant government institutions and stakeholders.

The main objective of the oil spill response strategies is to minimise harm to human health, the environment and socio-economic activities. The realities of the prevailing situations and the limitations of techniques and equipment must be well understood.

When spilled, most oil spreads quickly through the natural processes of evaporation, dissolution and dispersion. Spills occurring during petroleum activities, midstream operations or in the downstream petroleum sector will have a known position; the flow rate and oil characteristics may also be known. This should enable reasonable prediction of the oil movement and natural dissipation to be made. The selection of the appropriate clean-up response should also be simpler.

If an oil spill threatens a water body, riverbank or lakeshore, the response strategies must become defensive. This may involve protecting critical and sensitive ecosystems and preparing for clean-up operations.

A successful response strategy typically involves the use of multiple response tactics selected as the most effective, while minimising environmental and socio-economic impacts.

The response strategies should ensure that the priorities outlined below are considered in the following order of importance:

i. Protection of human life and health and ensuring safety of persons.

ii. Prevention and minimization of damage to the environment.
iii. Protection of socio-economic interests.

Based on the above priorities, the following response strategies should be applied:

i. Control of the oil spill source.
ii. Activation of appropriate response as close to the source of the spill as possible, in order to avoid oil spread.
iii. Recovery of spilled oil by mechanical means.
iv. Use of the Net Environment Benefit Analysis as a tool for decision making.
v. Continuous monitoring and surveillance of the spill and response operations.
vi. Initiation of an incident specific environmental and social impact assessment and environmental risk assessment.
vii. Waste management.
viii. Remediation.

An oil spill response strategy should address the specific risks identified for a given activity. Tactical responses should then apply for each scenario to minimise the overall oil spill impacts as well as specific impacts to the areas of higher vulnerability.

While developing an oil spill clean-up and response strategy, it is important to consider the manner in which waste will be managed. Factors such as capacity of the infrastructure to manage any waste produced and also the guiding principle of waste minimisation must be balanced against other factors that influence the clean- up strategy. Ideally, waste minimisation will be one of the principal guiding objectives of the clean-up operation.

8.1 Net Environmental Benefit Analysis

Net Environmental Benefit Analysis (NEBA) also referred to as Spill Impact Mitigation Analysis (SIMA) by the international oil industry associations – is used to evaluate the benefits and drawbacks or limitations of available response options (including natural recovery) and to select the response options that have the greatest net environmental benefit i.e. result in the least overall impact.

The Net Environmental Benefit Analysis takes into account the circumstances of the oil spill, the practicalities of oil spill combating actions, scientific understanding of the relative impacts of oil and clean-up options, and a value judgment of the relative importance of the social, economic and environmental resources at risk. Informed discussion and consensus-forming is as important as quantifiable scientific information in this process. The output of Net Environmental Benefit Analysis-based considerations, guides tactical deployment of strategies by the person responsible for the oil spill or the incident commander. Where there are large seasonal variations in climate and environmental and socio-economic sensitivities, these variations should be reflected in the guidance provided by the Net Environmental Benefit Analysis.

Net Environmental Benefit Analysis is part of the contingency planning process, though the same approach can be used during an oil spill response.

There are typically four stages to the NEBA process:

1. Compilation and evaluation of data for relevant oil spill scenarios, including fate and trajectory modelling, identification of resources at risk and determination of feasible response options

2. Prediction of outcomes/impacts for the 'no intervention' (or 'natural attenuation/recovery') option as well as the effectiveness (i.e. relative mitigation potential) of the feasible response options for each scenario.

3. Balancing of trade-offs by weighing and comparing the range of benefits and drawbacks associated with each feasible response option, including no intervention, for each scenario.

4. Selection of the best response option(s) to form the strategy for each scenario, based on the combination of techniques that could minimise the overall ecological, socio-economic and cultural impacts and promote rapid recovery.

The selection of the most adequate response strategy shall depend on a set of conditions pre-determined in the Environmental Risk Assessment and the response priorities should include:

(a). Protection of human life and health and ensuring safety of persons.
(b). Protection of wildlife, forests and fisheries resources, among others.
(c). Protection of lake shores, river banks and beaches.
(d). Protection of sources of water, agricultural lands and homesteads.

8.2 Response tactics

All oil spill response actions shall be undertaken in accordance with Net Environmental Benefit Analysis (NEBA) and the priorities listed in Section 8.1 of this Chapter. This approach involves weighing the advantages and disadvantages of taking a particular course of action.

For instance:

(a). If ecologically sensitive and protected areas are threatened, response operations to protect sensitive resources should be activated; and

(b). If the weather, currents, wave height or any other conditions in the water body renders the oil spill response or the protection of sensitive areas difficult, or where sensitive areas have already been affected, appropriate clean-up priorities and other response measures should be determined.

8.2.1 Mechanical response

Mechanical response is the primary oil spill response and its effectiveness as a response tactic depends on the type and amount of recovery equipment available, weather conditions, the nature of the oil, as well as local conditions such as ease of access or the presence of debris.

The main phases of most mechanical response tactics are;

(a). Containment
(b). Diversion or deflection
(c). Recovery
(d). Storage

Mechanical response on land may involve removing oil and contaminated soil from the surface or sub-surface through the use of mechanical equipment such as; tractors, earth movers and hand tools.

Mechanical response on water bodies will only be worthwhile if the depth of the oil layer can be increased by containing the spillage by the use of booms, thereby allowing equipment to operate at acceptable recovery rates.

Picture 5 : Some of the equipments used for spill response

Picture 6: Showing some of the equipments used for spill response

8.2.2 Non-mechanical response

Non-mechanical response tactics include; in-situ burning, bio-remediation and the use of dispersants. These tactics, however, are not advised for use in the Ugandan situation, due to the sensitivity of the recipient environment, characterized by freshwater ecosystems that are highly bio-diverse and very rich in aquatic life.

Dispersants, in particular, pose grave danger to Uganda's freshwaters, due to the heavy waxy nature of the crude oil whose high viscosity makes it extremely difficult, if not impossible, for dispersion and are, therefore, prohibited.

Hence, use of dispersants to respond to an oil spill in the waters or other environment of Uganda is prohibited except as the last and only viable option and in exceptional circumstances determined by the National Environment Management Authority in consultation with the Petroleum Authority of Uganda and other relevant Lead Agency. This is espoused in greater detail in the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020.

8.3 Establishment of decontamination sites

Decontamination sites shall be established between the dirty and clean areas of the worksite during oil spill response. Ideally, decontamination should be carried out in stages to minimise the use of disposable materials. Sorbents, for example, should be reserved for the final cleaning stage. Personnel should follow the decontamination chain from dirtiest to cleanest on a watertight platform where the washing effluents can be drained and collected. A separate area should be used for the decontamination of vehicles and machinery.

Chapter Nine

WASTE MANAGEMENT

9.0 Introduction

Oil spill response often results into rapid generation and accumulation of large quantities of oily waste. Emulsified oil, oiled sand, gravel and entrained debris increase the volume of waste. Waste management is, therefore, a vital component of oil spill response. This ensures efficient clean-up operations to reduce environmental risks and liabilities.

Management of waste from an oil spill involves setting up a logistics chain to transfer waste in a safe and secure manner from the recovery point to a final recycling or disposal facility. The logistics chain comprises secure and appropriately designed temporary storage sites and transportation that has the ability to interface with the existing available waste infrastructure. The logistics chain needs to be quickly established and tailored to the oil spill scenario.

Waste management activities require significant resources and involve multiple types of waste, both hazardous and non-hazardous.

Waste generated during an oil spill response is to be managed in accordance with the National Environment Act, 2019, the Petroleum (Waste Management) Regulations, 2019 and the National Environment (Waste Management) Regulations, 2020. The Office of the Prime Minister, licensees, operators and local governments are required to incorporate waste management strategies in their oil spill contingency plans. Secondary contamination from waste management during oil spill response must be avoided.

9.1 Waste management strategy

A waste management strategy is required to be prepared as part of contingency planning, and be re-confirmed or revised as appropriate, to reflect the practical situation encountered and to complement the clean-up strategy for a particular response. Key decisions regarding solutions for the management of waste are best confirmed during the initial response effort when it is possible to make realistic expectations of waste quantity and type.

The waste management strategy shall entail:

(i). Identification of potential waste types and quantities.
(ii). Waste management measures, including waste recovery and recycling opportunities.
(iii). A logistics chain for waste handling.

(iv). A list of available resources, including licensed waste handlers, facilities, equipment, personnel and the level of training of clean-up crews.

The practical early actions contained in Appendix 5 should be taken in response to an oil spill to confirm and implement the waste management strategy.

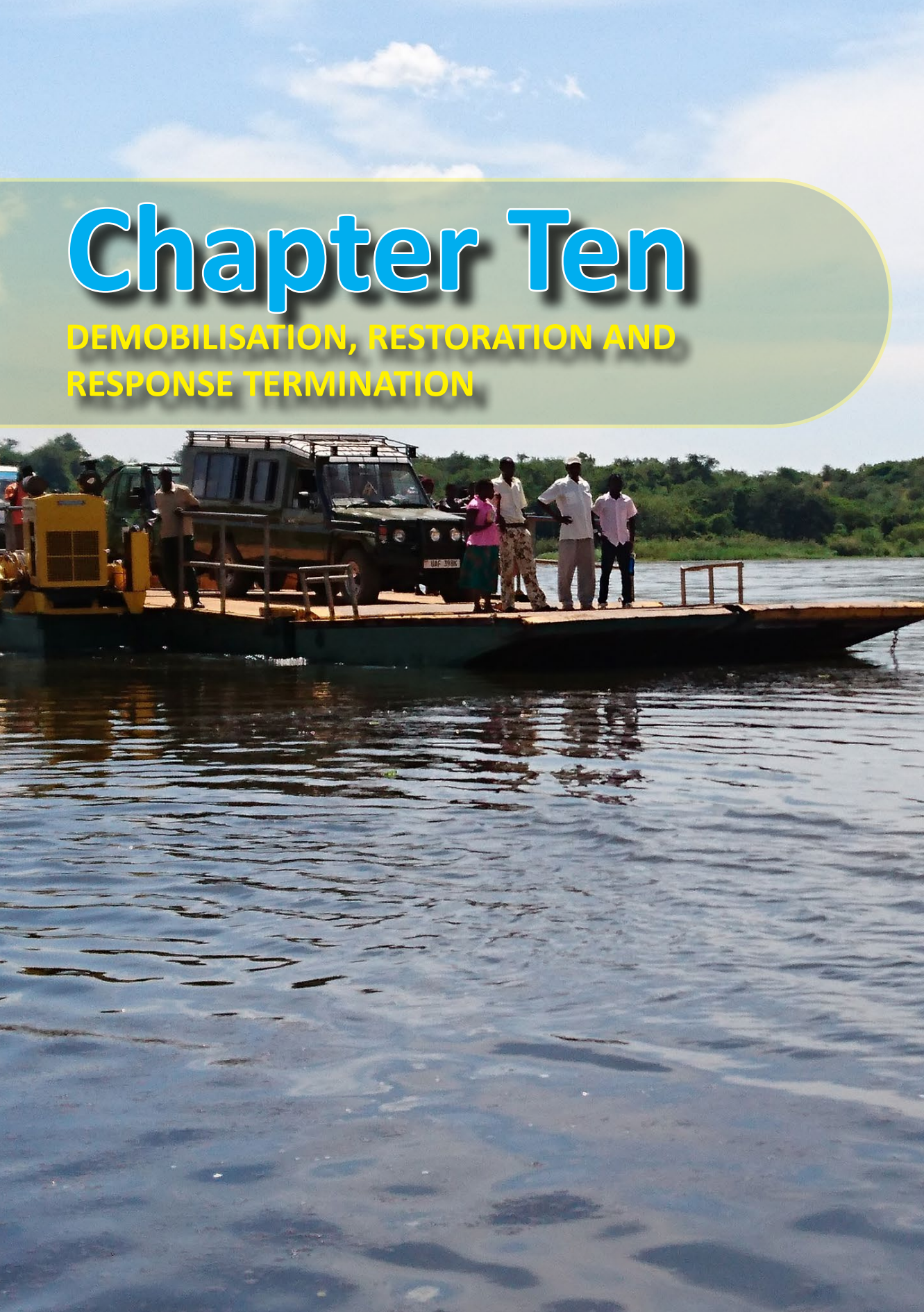
9.2. General waste management considerations

When an oil spill occurs, the volume of waste generated over a short timeframe is often more than the existing infrastructure can handle. Poor waste management can hamper the clean-up effort, by prolonging the process, occasioning littering and potentially introducing secondary contamination that may increase the impact of a spill. The handling and ultimate disposal of waste can take the longest time of any operation in the response, sometimes taking years from the date of the spill. Accordingly, the waste generated during an oil spill response should be managed by a licensed waste handler in accordance with the National Environment Act, 2019, the Petroleum (Waste Management) Regulations, 2019, National Environment (Waste Management) Regulations, 2020 and any other applicable law. Guidance on early waste management actions during an oil spill response is contained in Appendix 5.

Picture 7: Labelled waste bins for waste segregation

Chapter Ten

DEMOBILISATION, RESTORATION AND RESPONSE TERMINATION



Chapter Ten: DEMOBILISATION, RESTORATION AND RESPONSE TERMINATION

10.0 Introduction

This Chapter provides for demobilisation of the response operations and determination of when the response is complete. It also addresses the need for restoration and rehabilitation of affected environments and associated issues.

Licensees and operators shall be responsible for the demobilisation of their oil spill response, restoration of contaminated sites and post - oil spill monitoring.

Where Government is involved in an oil spill response, the responsibility for demobilisation of the clean-up response falls on the National Emergency Coordination and Operations Centre in the Office of the Prime Minister, in liaison with the Petroleum Authority of Uganda, the National Environment Management Authority and, as appropriate, the lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or persons responsible for operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

10.1 Demobilisation

A preliminary Demobilisation Plan outlining the process and resources required for demobilisation; and demobilisation of those resources shall be prepared by the responsible person and included in the Incident Action Plan provided for under chapter 4.

As response activities come to an end, resources should begin to be demobilised and ultimately, a decision should be made to terminate the response. When this decision is made, the response enters the remediation or restoration phase to among others monitor or enhance natural recovery of the impacted areas.

In any event, the demobilisation should be done after thorough inspection of the affected site and equipment storage areas, to ensure an orderly de-escalation of the response. The entire demobilisation process must be carried out in accordance with the National Environment Act, 2019, the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 and any other applicable law.

10.1.1 Demobilisation by licensees and operators

Before licensees and operators demobilise clean-up operations, it is important for them to set goals early in the response in order to minimise harm to human health and to ensure clean-up of contaminated sites. Before the decision to demobilise response operations is made, qualified technical experts will be engaged by licensees or operators to ensure compliance with set goals, the National Environment Act, 2019, the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 and any other applicable law.

Following the verification of the demobilisation exercise by the technical experts, a report of completion of the clean-up exercise shall be generated by the technical experts. This report shall be used by the licensee or operator as a basis for demobilisation of the clean-up operations.

The verification report shall be shared with the Petroleum Authority of Uganda, the National Environment Management Authority, the lead agency responsible for the downstream petroleum sector under the Petroleum Supply Act, 2003 or persons responsible for operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013, the relevant local government or any other lead agency, as appropriate. Where Government was involved in the oil spill response by the licensees or operators, the verification report shall also be submitted to the Office of the Prime Minister.

10.1.2 Demobilisation by Government

The National Emergency Coordination and Operations Centre shall:

a. Oversee the demobilisation in collaboration with the Petroleum Authority of Uganda, the National Environment Management Authority and the relevant lead agency or local government.

b. Ensure that all relevant documentation relating to the response operation is completed.

c. Ensure that temporary storage sites are restored and other work areas are decontaminated by the responsible person.

d. Liaise with all interested parties regarding the conduct of the restoration exercise, including the transportation of response equipment and Personal Protection Equipment for cleaning and decontamination of affected sites.

e. Prepare a formal detailed report (to include time and date of termination of the response, strategies and clean-up resources used, lessons learnt and recommendations).

Any issues relating to expenses and claims in government oil spill response operations shall be handled in accordance with Chapter 11.

10.1.3 End Points

The licensees, operators and Government shall determine the point at which an oil spill response operation, including treatment or clean-up should end. The determination of an end point involves unique decisions that reflect the individuality of each oil spill incident. Factors involved in the decision-making process include assessments of probable environmental and socio-economic impacts of the spill, rate of natural recovery and effects of the various treatment or clean-up options.

At the outset of an oil spill response, the end-point should be determined in order to provide a foundation for selecting appropriate treatment or clean-up strategies and tactics, for planning operations activities and logistics support.

10.2 Restoration and post spill assessment and monitoring

10.2.1 Site rehabilitation

Once clean-up operations are completed, the affected areas should be rehabilitated. The rehabilitation shall be in accordance with the National Environment Act, 2019 and any other applicable law. The licensee, operator or any other person responsible for the oil spill has the primary responsibility and liability for restoration and rehabilitation. Rehabilitation in Protected Areas and Conservation Areas shall be done by the licensee, operator or other responsible person in consultation with the relevant lead agency, as appropriate.

10.2.2 Post spill monitoring

Upon completion of the clean-up operations, monitoring of the recovery of the ecosystems and restoration of impacted areas may be necessary in accordance with the monitoring programme of the licensees, operators or other responsible person. The need for post-spill monitoring and the extent of the monitoring programme to be established, will depend on the circumstances of each case, with particular emphasis on the size and likely health and environmental impact of the oil spill. Guidance on post spill monitoring is contained in Appendix 6.

The degree of restoration and post spill monitoring will be determined in collaboration with the National Environment Management Authority, the Petroleum Authority of Uganda, other relevant lead agency and stakeholders. The National Environment Management Authority may, in collaboration with the Petroleum Authority of Uganda or other relevant lead agencies and stakeholders, require specific post- spill environmental monitoring studies to be undertaken, and may determine when monitoring should be initiated.

Where Government takes over an oil spill response operation, post spill monitoring shall be led by the Petroleum Authority of Uganda or relevant lead agency in cooperation with the Office of the Prime Minister, the National Environment Management Authority, the licensee, operator or other responsible person.

Picture 8: Habitat functionality in its original state

10.3 Termination of Response

The licenses, operator or other responsible person shall take the decision to terminate their oil spill response operations and post-spill monitoring with the consent of the Petroleum Authority of Uganda, other relevant lead agency and the National Environment Management Authority. The Petroleum Authority of Uganda may, however, in collaboration with the National Environment Management Authority, decline the termination or advise the Government to take over the oil spill response operations in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020.

This also applies in termination processes for the downstream petroleum sector under the Petroleum Supply Act, 2003 or operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

Where Government takes over the oil spill response operations, the Office of the Prime Minister shall, in consultation with the Petroleum Authority of Uganda, other relevant lead agency and the National Environment Management Authority, take the decision to terminate the oil spill response operation. The Office of the Prime Minister shall subsequently notify the licensee, operator and other response stakeholders about the decision to terminate the oil spill response. The Office of the Prime Minister shall coordinate the return of personnel, equipment, unused products and other response resources deployed in the response operation. Where assistance was requested from other countries, the Office of the Prime Minister in collaboration with the Petroleum Authority of Uganda, other relevant lead agency and the National Environment Management Authority, shall prepare a report on the effectiveness of the personnel, equipment, products and other means received as assistance. The report shall be circulated among all organisations and institutions involved in the operation.

10.3.1 Debrief

The licensee, operator or other responsible person shall hold a post-incident debrief for their oil spill response operations.

Where Government took over the oil spill response operations, the National Incident Commander in collaboration with the Petroleum Authority of Uganda or other relevant lead agency shall hold a post-incident debrief.

Debrief shall, among others, address:

a. Oil spill causes, if known.
b. A preliminary summary of the impacts of the oil spill on human health, the environment and socio-economic activities.
c. peed of response activation.
d. Effectiveness of tactics and strategies.
e. Equipment suitability.
f. Health, Safety and Security issues, if any.
g. Communications and acknowledgement of persons involved in the response.
h. Manner in which the licensee's and operator's oil spill response operations were integrated with response from government institutions and other stakeholders.
i. Logistic support received, both national and international.
j. The lessons learned from the response operations.

Picture 9: Stakeholder engagements during a debrief meeting

10.3.2 Post-spill response operations report

The licensee, operator or other responsible person shall, when the oil spill response operations are finalised, prepare a post-spill response report in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. This report should be submitted to the Petroleum Authority of Uganda and the National Environment Management Authority.

A post-spill response report shall be submitted to the responsible lead agency in the case of the downstream petroleum sector covered by the Petroleum Supply Act, 2003 or operations and facilities relating to oil storage, processing or distribution not covered by the Petroleum (Exploration, Development and Production) Act, 2013 or the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013.

In respect of Government oil spill response operations, the incident command structure under the National Emergency Coordination and Operations Centre shall assess whether the response operations were successful and effective.

Chapter Eleven

LIABILITY, COST RECOVERY AND CLAIMS

11.0 Liability

A licensee, operator or other responsible person is liable for pollution damage caused by the escape or discharge of oil during an oil spill incident, regardless of fault. Issues of costs and claims may be handled by mutual consent, arbitration or recourse to Courts of law.

11.1 Cost recovery

The cost of oil spill response operations, including clean-up and restoration cost, shall be borne by the licensee or operator responsible for the spill in accordance with the National Environment Act, 2019, the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 and any other applicable law.

Where Government assists a licensee, operator or other responsible person in managing their oil spills or where Government takes over oil spill response operations, the costs incurred during Government involvement in those operations shall be borne by the licensee, operator or other person responsible for the oil spill.

If financial security was required from the licensee, operator or other responsible person, the Government may use that security to recover costs incurred in oil spill response operations.

The Office of the Prime Minister in liaison with the Petroleum Authority of Uganda shall establish a mechanism for coordinating payment of claims and compensations, and for recovery of costs of an oil spill and response operation.

Accurate records are vital since reliance on memory for subsequent compilation of claims is unrealistic, particularly during a lengthy and fast-moving response. Tracking and documentation of all expenditures and recording of costs for response personnel, equipment and assets is, therefore, essential in this regard. Hence, photographic and video evidence may be relevant.

The documentation to support a claim for cost and expenses incurred by Government should include, among others:

a. A summary of events, including a description of the work carried out in different areas and of the working methods chosen in relation to the circumstances prevailing during the incident.

b. A delineation of the area affected, describing the extent of the oil spill, and identifying those areas most heavily contaminated, presented in the form of a map or chart supported by photographs or video.

c. Analytical and/or other evidence linking the oil spill to the licensee, operator or other responsible person.

d. Dates on which work was carried out (with weekly or daily costs).

e. Labour and administrative costs (number and categories of response personnel, regular and overtime rates of pay, and days/hours worked).

f. Equipment and material costs (types of equipment used, rate of hire, consumable material quantity and cost).

g. Transport costs (number and types of aircraft, vehicles or vessels used, number of days/hours operated, rate of hire or operating cost).

h. Costs of temporary storage (if applicable) and final disposal of recovered oil and oily material.

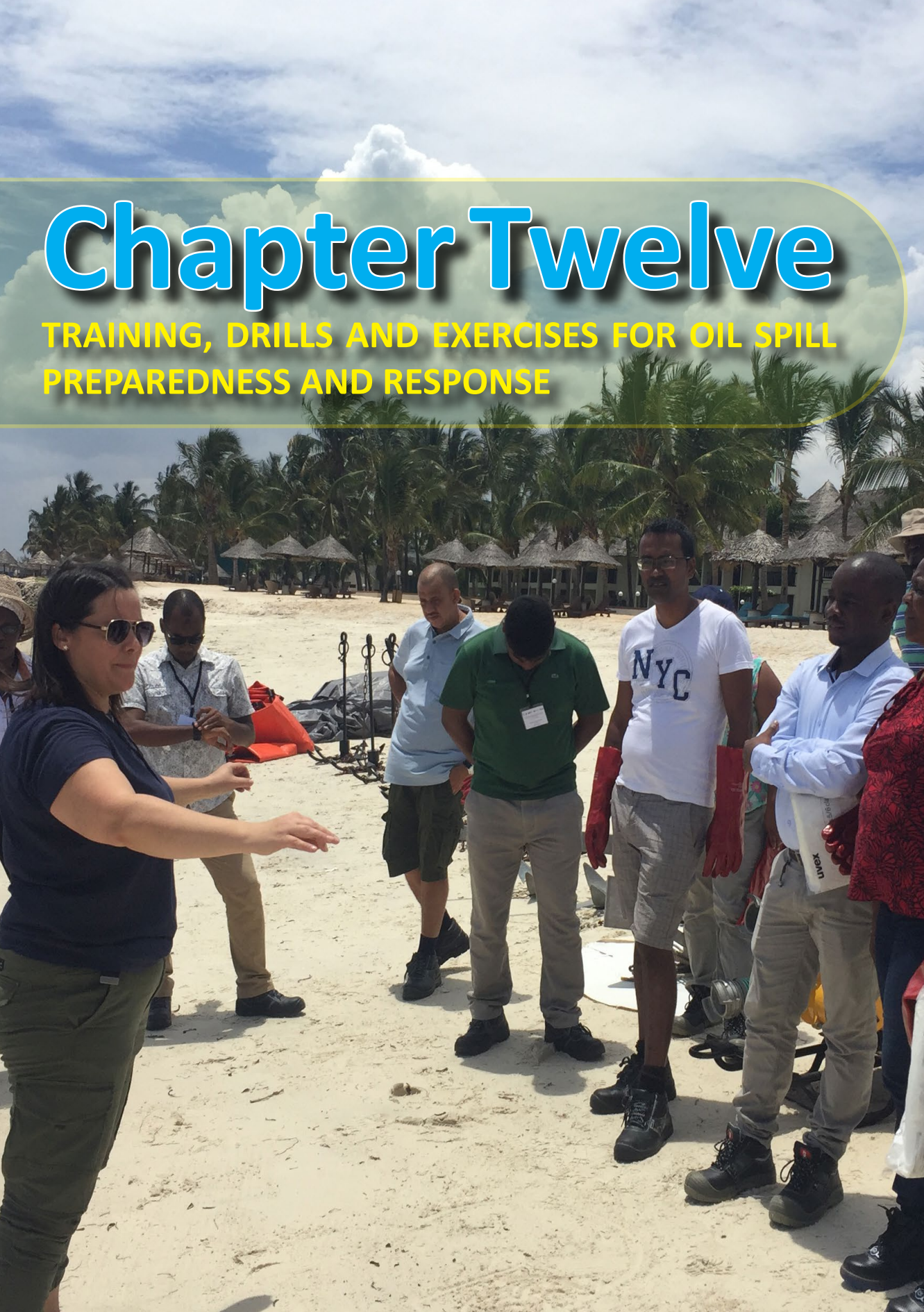
11.2 Claims from third parties

Oil spill incidents often involve claims for damage to property, business disruption, harm to human health or the environment and other matters. A licensee, operator or other responsible person is liable to meet such claims in accordance with applicable law. The licensee, operator or other responsible person may also take out insurance against any insurable risks that may result into claims.

Picture 10: Stake holders engagement

Chapter Twelve

TRAINING, DRILLS AND EXERCISES FOR OIL SPILL PREPAREDNESS AND RESPONSE



Chapter Twelve: TRAINING, DRILLS AND EXERCISES FOR OIL SPILL PREPAREDNESS AND RESPONSE

12.0 Introduction

Licensees, operators and Government institutions should conduct oil spill response exercises to test and verify their respective contingency plans and procedures as well as verify the role and expectations of the various parties involved. The oil spill response exercises are aimed at testing the efficiency and effectiveness of the contingency plans of the licensees, operators and Government institutions, and to identify gaps or strengths in the area of activation, resource mobilisation, coordination, response management, deactivation and demobilisation. Licensees, operators, Government institutions and relevant stakeholders should also conduct regular trainings to build competencies in oil spill preparedness and response.

Reports of trainings, drills and exercises shall be made available to the Office of the Prime Minister, the Petroleum Authority of Uganda, a lead agency responsible for petroleum supply, other relevant lead agency and the National Environment Management Authority in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020.

12.1 Training programs for oil spill response

Licensees, operators and relevant Government institutions shall, in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020, ensure that persons likely to be involved in oil spill response operations are trained. The training programmes shall be developed based on identified capacity needs and internationally accepted training modules.

The Petroleum Authority of Uganda and the lead agency responsible for petroleum supply shall ensure that internationally accepted training modules are adopted, customised for Uganda and made available to relevant stakeholders including first responders, personnel, incident commanders, and supervisors within the incident command.

The Incident Commander of the licensee and operator and the National Incident Command should be trained in the relevant oil spill preparedness and response system. Supervisors of the different units of the oil spill preparedness and response operations must fully understand the operational requirements, limitations, and safe operating requirements of oil spill response equipment.

Training should be designed to ensure a high level of preparedness and to build

competence. Government institutions with responsibilities under this Plan are also encouraged to participate in the training events conducted by the licensees and operators.

12.2 Drills and Exercises

Licensees, operators, Government institutions and relevant stakeholders shall conduct oil spill preparedness and response drills and exercises as may be necessary.

12.2.1 Programme of exercises

Annual drills and exercises shall be conducted to ensure familiarity with this Plan and the oil spill contingency plans of Government institutions, licensees and operators, in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. Where appropriate, Government exercises and drills may be coordinated with the relevant local governments, licensees and operators to provide an opportunity to learn how well different contingency plans and organizations interface. These exercises may require mobilisation and deployment of personnel, equipment and materials to ensure their availability, performance and competence.

The oil spill response exercises shall be used to raise awareness of all the participants about oil spills and to ensure the maintenance of an adequate level of preparedness for all the parties involved.

Upon completion of the exercise, a report shall be prepared by the person who conducted the drill or exercise. The report shall include information about exercise scenario, aims of the exercise, lessons learnt and actions put in place in response to the lessons learnt. Experiences gained from drills and exercises shall be documented for consideration during the review of oil spill contingency plans of licensees, operators, Government institutions and relevant stakeholders.

12.2.2 Categories of exercises

Oil spill response exercises include:

- Notification exercises
- Table-top exercises
- Equipment mobilization exercises and drills
- Verification exercises
- Full scale exercises

(a). Notification exercises

Notification exercises shall be designed to rehearse "alert and mobilisation procedures" of the response teams, and are executed by telephone and other communication means, according to the response plan.

The notification exercise may also be used to test;

i. Communication systems, including the aptitude for quick and accurate transmission of information.
ii. Availability of personnel.
iii. Effectiveness and swiftness of internal and external systems to respond.
iv. Equipment and resource mobilisation options.

Notification exercises may be carried out at any time of the day or night, with or without warning.

(b) Table-top exercise

Table-top exercises shall consist of interactive discussions among the members of a response team about a scenario without involving mobilisation of personnel or equipment. These exercises shall be carried out in conference rooms or in a series of rooms connected by telephone lines. The emphasis of these exercises is on functions and actions of individuals, interaction among the various parties and development of information and response strategies.

Table-top exercises shall be pre-announced in order to ensure the presence of personnel.

(c) Equipment mobilisation exercises and drills

Equipment mobilisation exercises and drills shall involve enlisting equipment in response to an oil spill case scenario. The exercises and drills shall be used to test response capacity and promote experience pertaining to local conditions and various oil spill case scenarios.

Equipment mobilisation drills shall involve personnel expected to use the equipment. The personnel may be one or more persons whose capability in the use of particular equipment has to be tested. These drills also enable the personnel to check the soundness and operability of the equipment.

Equipment mobilisation exercises will target many more personnel within one entity or collaborating entities with the aim of testing the ability of those personnel to collectively mobilise and use their equipment, including working together as a response team.

The personnel expected to operate oil spill response equipment must participate in the equipment mobilisation exercises and drills so that their availability and capacity is evaluated. The parties undertaking the exercises or drills may invite other licensees, operators, Government institutions and regional or international bodies to act as observers.

The equipment mobilisation exercise or drill should be frequently repeated until the teams are familiar with the equipment. In certain cases, an equipment mobilisation drill may be carried out together with an incident control drill to demonstrate the ability of the equipment to handle an actual oil spill incident.

(d) Verification exercise

Licensees and operators may undertake verification exercises designed to check compliance with their oil spill contingency plans and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. Verification exercises shall be conducted only for the personnel involved in an oil spill response incident to ensure that the team is properly tested and trained. Where a verification exercise is undertaken, it shall be followed by a review session.

(e) Full scale exercise

A full-scale exercise is intended to, as realistically as possible, simulate a real oil spill scenario and possible response action. A full-scale exercise will involve various stakeholders that are likely to be involved in an oil spill response, including Government Institutions, licensees, operators, and other relevant stakeholders. Such an exercise will test in realistic ways the coordination, command, control, and real-time response actions required in an oil spill response.
The exercise must allow testing and validation of all elements of an oil spill contingency plan. These include; deployment of physical and mobile emergency operations centres, incident command functions and emergency response equipment. Given the scope of the oil and gas activities and operations, a full-scale exercise may be multi- jurisdictional involving different districts and countries in some cases.

The Petroleum Authority of Uganda, Office of the Prime Minister, the lead agency responsible for petroleum supply, other relevant lead agency, the National Environment Management Authority, licensees, operators and other key stakeholders shall work as a team to collectively plan and implement a full-scale exercise. Due to the amount of financial and logistical resources required in conducting a full-scale exercise, a realistic timeline should be put in place to enable planning and execution. Full scale exercises should be conducted at least once every two years.

Appendices

Appendix I: LIST OF THE POLICIES, LEGAL, REGULATORY FRAMEWORKS AND MULTI LATERAL ENVIRONMENTAL AGREEMENTS APPLICABLE TO OIL SPILL CONTINGENCY PLANNING

A. Policies

1. National Policy for Disaster Preparedness and Management (2011)
2. National Oil and Gas Policy (2008)
3. National Water Policy (1999)
4. National Environment Management Policy (1994)
5. Uganda Wildlife Policy (2014)
6. National Policy for the Conservation and Management of Wetland Resources (1995)
7. Uganda National Land Policy (2013)
8. National Land Use Policy (2011)
9. National Agriculture Policy (2003)
10. National Tourism Policy (2003)
11. Uganda Forestry Policy (2001)
12. National Fisheries and Aquaculture Policy of 2017
13. The Decentralization Policy (1997)

B. Acts

1. Constitution of the Republic of Uganda, 1995 (as amended)
2. National Environment Act, 2019
3. Uganda Wildlife Act, 2019
4. Water Act, Cap 152
5. Fish Act, Cap 197
6. National Forestry and Tree Planting Act, 2003
7. Prohibition of the Burning of Grass Act, Cap 33
8. Historical Monuments Act, Cap 46
9. Occupational Safety and Health Act, 2006
10. Petroleum (Exploration, Development and Production) Act, 2013
11. Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act 2013
12. Petroleum Supply Act, 2003
13. Local Governments Act, Cap 243
14. Land Act, Cap. 227 (1998) as amended
15. Registration of Titles Act, Cap 230
16. 1Physical Planning Act, 2010

17. Survey Act, Cap 232
18. Roads Act, 2019
19. Civil Aviation Act, Cap 354

C. Regulations and Standards

1. National Environment (Environmental and Social Assessment) Regulations, 2020
2. National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, S.I. No. 153-5
3. National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020
4. Water (Waste Discharge) Regulations, S.I. No. 152-4
5. National Environment (Waste Management) Regulations, 2020
6. Petroleum (Waste Management) Regulations, 2019.
7. National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020
8. National Environment (Management of Ozone Depleting Substances and Products) Regulations 2020
9. Petroleum (Exploration and Production) (Conduct of Exploration Operations) Regulations, S.I. No. 150-1
10. Civil Aviation (Aerodromes) Regulations, 2007
11. The Petroleum (Refining, Conversion, Transmission and Midstream Storage) Regulations, 2016
12. The Petroleum (Refining, Conversion, Transmission and Midstream Storage) (Health, Safety and Environment) Regulations, 2016
13. The Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations, 2016
14. The Petroleum (Exploration, Development and Production) Regulations, 2016

D. Multilateral Environmental Agreements

1. Guidelines developed by the World Bank Group and IFC
2. Agreement on the Nile River Basin Cooperative Framework, 2010; signed by Uganda on 14/05/2010
3. Convention on Migratory Species of Wild Animals (CMS), 1979; ratified by Uganda on 1/08/2000
4. Convention on Biological Diversity, 1992; ratified by Uganda 8/09/1993
5. Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971; ratified by Uganda on 04/03/1988
6. Convention concerning the Protection of the World Cultural and Natural

Heritage, 1972; ratified by Uganda on 20/11/1987

7. Basel Convention on Transboundary Transportation and Disposal of Hazardous Wastes,1989; ratified by Uganda on 11/03/1999
8. Bamako Convention on the Ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, 1991; ratified by Uganda on 01/10/1998
9. United Nations Convention on the Law of the Sea, 1982. Uganda signed the Convention on 10/12/ 1982 and ratified it on 9/ 11/ 1990
10. Convention on the International Maritime Organisation, 1948. Uganda accepted to be party on 30/6/2009
11. International Convention on Oil Pollution Preparedness, Response, and Cooperation, 1990
12. International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL) as amended in 1997
13. Lake Victoria Transport Act, 2007
14. Nairobi International Convention on the Removal of Wrecks, 2007
15. 1992 International Convention on Civil Liability for Oil Pollution Damage Civil Liability Convention
16. International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 and Supplementary Fund Protocol
17. International Convention on civil liability for Bunker Oil Pollution Damage, 2001

Appendix 2: INCIDENT ACTION PLAN

THE REPUBLIC OF UGANDA	**NATIONAL OIL SPILL CONTIGENCY PLAN**	**INCIDENT ACTION PLAN No: IAP/.....**

1. Incident Name (brief name of the incident using scenario that led to a spill and location)	2. **Operational Period of the Incident Action Plan** (date and time for which this incident action plan will be valid) .....

3. **Description and status of the incident** (Please provide as much detail as possible, for instance: the events that led to the incident; the overall action after the incident happened; exposure or event that best describes the circumstances that resulted into consequences after the spill; the name and type of any machinery, equipment or substance involved etc.)

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4. **Incident response objectives** (List the main concerns during the oil spill response operation)

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5. **Response teams/units in operation and respective team leaders** (List of the response teams or units designated by the incident commander and respective team leaders)

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6. **Weather Conditions at the operational area** (Describe the state of the atmosphere in the operational area with respect to temperature, cloudiness, sunshine, wind speed and direction, rain, etc. and forecast for a defined period of time)

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7. **Overall priorities of the oil spill response operation** (Identify pertinent site-specific information that can greatly assist oil spill responders in understanding hazards, best strategy for the response and reducing the potential for damage)

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8. Key Environment / Socio-economic priority areas (Identify key environment and socio-economic sensitivities that may be impacted the oil spill incident)

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9. **Oil spill response strategies** (Briefly describe the oil spill response strategies to be used in addressing specific risks identified for a given scenario and minimise overall oil spill impacts as well as specific impacts to the areas of higher vulnerability)

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10. **Resources assigned in this period** (List of resources deployed for the oil spill response operation)

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11.**Special instructions to various units/teams** (Tasks and considerations for oil response teams to address high priority targets and major risks during the operation)

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12. **Communications** (radio and / or phone contact numbers for key team leaders)

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13. **Other remarks** (Any other information related to special assignments, safety Notes, medical evacuation, wildlife impacts etc.)

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14. Attachments (mark "X" if attached)

- Meeting plan
- Detections of oil
- Map of environmentally vulnerable or sensitive/fragile areas in the vicinity
- Expected spreading of the pollution
- Resources that are notified and mobilised
- Weather forecast
- Contact list for key personnel

15. Recipients of this Incident Action Plan

……
……

16. Prepared By	**17. Approved By**
……	**……**
……	**National Incident Commander (Name & signature)**
Date / Place: ……	**Date/Place: ……**

Appendix 3: OIL SPILL NOTIFICATION FORM

To: The Petroleum Authority of Uganda
Company Name:
Location of oil spill or imminent threat of oil spill: District/sub-county/village …….. Facility …… GPS Coordinates ……
Date discovered: Time discovered:
Description of oil or oil product (e.g. crude oil, processed oil, diesel, petrol): …… …… …… ……
Estimated quantity of oil spilled: Method of estimation:
Persons dead, injured or at risk: …… …… …… …… ……
Type and estimated quantity of hazardous chemicals (if any): …… ……
Oil spill first discovered by (name, address and contact information): …… ……
Oil spill first reported by (name, address and contact information): …… …… ……
Cause or reason of oil spill if known: …… ……
Corrective measures taken or to be taken: …… …… ……

Equipment, vessels or facilities damaged due to oil spill: …… ……
……
Remarks: …… …… …… ……
Any additional comments (for official use only) …… …… ……
Name, signature and date:

Appendix 4: AN INDICATIVE LIST OF EQUIPMENT AND RESOURCES

Category of equipment	Type of Equipment	Purpose of equipment
Equipment for source control and containment	**Tier 1:** Pre-installed containment booms at the shoreline near expected discharge points into the lake. These should be prepared for rapid deployment and anchoring. Suitable skimmers for the oil type and temporary storage capacity to recover oil contained in the booms are required. Earth moving equipment	Equipment required for source control and containment should be available on short notice. Tier 1 equipment should be available within two hours from the time of detection.
Equipment for surveillance and tracking	**Tier 1:** Vehicles including cars, all-Terrain Vehicles and motor cycles to allow observation along the water body, river banks and lake shores. **Tier 2:** Access to boats preferable with relevant sensors such as Infrared sensors (IR) which allows observations during the night. Access to aircrafts and Remotely Piloted Aircraft System (RPAS) with relevant sensors to perform aerial surveillance. This may be sought in co-operation with the Uganda Peoples Defence Forces and Uganda Police Force.	Equipment required for surveillance and tracking should be available on short notice and in any case for purposes of Tier 1, within a period of less than two hours.
Equipment for containment and recovery on water	**Tier 2:** Vessel based boom systems with recovery and storage capacity to contain and recover significant volumes of free oil emulsion on the lake surface. Deflection and exclusion booming on rivers to reduce spread of oil downstream consisting of light to medium size booms with anchoring systems and recovery and storage capacity.	Tier 2 equipment required for containment and recovery on water should be available on short notice of less than six hours.

Equipment for sensitive area protection	**Tier 1 and Tier 2:** Boom systems for land based and vessel-based exclusion/ deflection booming. Light to medium size booms with anchoring systems.	Equipment for sensitive area protection should be available on short notice and in any case for purposes of Tier 1 and Tier 2, within a period of less than six hours from detection.
Equipment for clean-up and normalization of shorelines	**Tier 1 and 2:** Shoreline cleaning equipment for manual and mechanical cleaning of significant volumes of stranding oil including absorbents for less contaminated shoreline areas	For the purpose of Tier 1 and Tier 2, equipment for clean- up and normalization of shorelines should be available on response time less than twelve hours of oil spill detection.
Equipment for surveillance and tracking of oil spill on land and water	**Tier 1:** Vehicles including cars, All Terrain Vehicles and Motor cycles to allow observation along the pipelines and contaminated/ threatened areas. **Tier 2:** Access to aircrafts with relevant sensors to perform aerial surveillance.	This oil spill response equipment is based on requirements identified in the environmental risk assessment where there is potential for discharge of oil on land. For each of the equipment categories, an indication of a possible Tier structure is given. Equipment required for surveillance and tracking should be available on short notice and in any case for purposes of Tier 1, within a period of less than two hours.
Equipment for source control and containment	**Tier 1:** Mechanical and manual equipment (tractors, excavators, shovels) to establish exclusion structures including pits in pre-planned positions along the pipeline. Lightweight booms (absorbent booms with skirts) for containment booming in contaminated water systems. **Tier 2:** Additional equipment to handle high volumes of oil requires equipment resources including excavators, tractors, bulldozers, trucks and additional equipment	Equipment required for source control and containment should be available on short notice. In respect to Tier 1 equipment should be available within two hours from the time of detection of the oil spill.

	for containment booming in contaminated water systems. including excavators, tractors, bulldozers, trucks and additional equipment for containment booming in contaminated water systems.	
Equipment for clean-up and normalization of shorelines	**Tier 1:** Mechanical and manual equipment for removal of contamination on land for small volumes, including absorbents for less contaminated areas. **Tier 2:** Access to additional mechanical equipment for removal of contamination on land for significant volumes of oil, including absorbents for less contaminated areas	For Tier 1, equipment for clean-up and normalization of shorelines should be available on response time less than twelve hours of oil spill detection.
Oil spill response equipment storage depots		
Equipment to be used should be stored in strategic locations throughout the country.	Tier 2 response resources	Location of storage depots should be based on the risks associated with the facilities, the vulnerbility of the receiving environment in case of an oil spill and accessibility of the equipment.
Oil spill response equipment to be stored		
Mechanical equipment	Tractors, excavators and front loaders	All- Terrain Vehicles and trucks should be identified to be mobilized for oil spill response purposes.
Hand tools	Rakes, shovels and pitchforks	For recovery of oil and contaminated material
Lining material	Plastic sheeting or membranes	For lining of containment structures and storage sites to prevent leakage.
Sorbent material	Booms and mats	For recovery of oil and oil emulsion.
Containment material	Large bags or oily waste bags	For temporary storage of recovered waste and sorbent materials.
Recovery systems	Simmers, pumps or recovery systems with power packs	For removal of oil.

Emulsion transfer equipment	Pumps with necessary hoses and couplings	For oil or oil emulsion transfer and water for flushing.
Primary storage systems		To store recovered oil and waste.
Shoreline protection equipment	Light oil booms	For containment and reducing secondary pollution from shorelines.
Anchoring equipment	Small, light anchor or mooring systems	To secure booms in position.
Digital documentation equipment	Hand-held GPS and digital camera	For documentation and mapping.
Marking equipment		For outlining contaminated areas.
Digging systems	Hand tools, auger, excavator	For subsurface investigation.
Radar/FLIR		For oil detection on water.
Detection equipment	IR camera/video system	For detection of oil in low visibility.
Tracking buoy system		For tracking of oil in low visibility.
RPAS		For oil tracking.
Sensor carriers		
Monitoring equipment	For sensor deployment platform and aerial monitoring.	For sensor deployment platform and aerial monitoring.
Personal Protective Equipment for oil spill personnel		
Whole body protection or specific purpose equipment	Hard hats, safety or chemical splash goggles, hearing protection, cover-alls, gloves, boots or shoes with steel toes, high visibility jackets or vests, respiratory equipment if required.	Health and safety purposes
Personnel		
Field team for supervision and execution of investigations.		Personnel should have knowledge, competence and experience, and should be trained in oil spill delineation and mapping and use of surveillance equipment.

Field teams of personnel for observation and interpretation of recorded data.		Such personnel should have competence and knowledge in visual inspection.
Shoreline Clean-up Assessment Team (SCAT)		Such teams shall make plans and recommendations for clean-up of lakeshores, riverbanks and wetlands.
Field team for wildlife response.		Personnel should have competence and training to manage oil affected wildlife.

Appendix 5: EARLY WASTE MANAGEMENT ACTIONS DURING OIL SPILL RESPONSE

Item	Aspect	Practical actions
1.	Establish the nature of the task	• Gather information predicting likely locations, quantities and types of oily waste that will be produced. • Confirm the types of waste that may be expected. • Make an initial qualitative/semi-quantitative estimate of the likely volume of waste
2.	Take early action	• Notify applicable regulatory agencies. • Mobilize initial oil spill response teams. • Notify/mobilise licensed waste handlers. • Take early steps to minimise the oily waste produced. • Predict which areas may be contaminated by the oil spill and act to remove debris from that area to avoid the oil spreading into that area and to prevent oil seepage into the ground.
3.	Waste management strategy and plan	• Confirm availability of permitted management facilities and licensed waste handlers. • Confirm storage capacity of existing waste management infrastructure. • Consider the health, safety and security of the public and responders. • Consider the vulnerability of the receiving environment to oily waste. • Refine the waste management strategy and plan to reflect the practical situation. • Confirm classification of the waste (e.g. toxic, radioactive). • Define waste minimisation and segregation needs. • Estimate infrastructure required to support the waste management strategy. • Plan for prevention of littering and secondary contamination. • Identify issues to be resolved and assign responsibility for them, including liaison with regulators.

4.	Communication/ Training	• Ensure the spill management and clean-up teams are familiar with the defined waste management strategy. • Ensure that the clean-up crew are trained on how to handle the waste. • Ensure good, ongoing communication links between the clean-up operations teams and those responsible for waste management.
5.	Deployment of personnel	• Set up a defined deployment process to ensure human resource needs for the implementation of the waste management strategy are met with suitably qualified individuals. • Ensure adequate staffing levels are available for a continuous response effort.
6.	Compliance	• Implement a compliance assurance system for waste management operations, including inspections, audits, waste management advisers at clean-up sites, waste manifests.
7.	Green alternatives	• Test the waste management options generated during contingency planning. It is possible that location, logistics, economics or regulatory hurdles may make an option unsuitable for this particular spill. • Identify and evaluate new options for reuse and recycling, where applicable.

Appendix 6: GUIDANCE ON POST-SPILL MONITORING

1. Monitoring of oil spill effects on human health

Communities affected by the oil spill should be identified. Community members should visit medical facilities for routine examination to determine the extent and effect of exposure to oil spill. Medical practitioners need to pay attention to exposure pahways such as breathing contaminated air, direct skin contact, using or consuming contaminated water and eating contaminated food.

2. Monitoring of oil concentrations in water bodies

Water samples should be taken at various water depths and at different distances from the source of the oil spill. Comparisons should be made with baseline data.

3. Monitoring of oil concentrations in sediments and soils

Sediment and soil samples should be screened for hydrocarbon content. Samples with high levels of hydrocarbons can then be analysed in more detail if required to establish the identity of the oil.

4. Monitoring of impact on fish

Where there is an oil spill on water, the impact of the spill on fish should be assessed. Samples should be collected from commercial catches to be analysed for hydrocarbon contamination.

5. Monitoring of impact of oil spill on biodiversity on land or in water

Studies should be made of the flora and fauna on water bodies, lakeshores and riverbanks to assess the extent of oil spill damage. Sub-lethal effects may only become apparent in the longer term and it may, therefore, be necessary to establish a monitoring programme to chart the recovery of affected habitats and species and to record any subsequent effects.

It may also be relevant to study populations of micro-organisms from both oiled and un-oiled sites immediately the oil spill occurs.

6. Monitoring of impacts of oil spills on Local Communities

Oil spills may cause significant short or long term impacts on local communities. Studies should, therefore, be undertaken to determine the socio-economic impacts of the oil spill on local communities.

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