PERFORMANCE AUDIT REPORT ON COMPLIANCE
MONITORING AND ENFORCEMENT OF ENVIRONMENTAL
POLICIES, LAWS AND REGULATIONS AS REGARDS TO
PETROLEUM EXPLORATION ACTIVITIES IN TANZANIA
THE UNITED REPUBLIC OF TANZANIA
NATIONAL AUDIT OFFICE

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PREFACE

The Public Audit Act No. 11 of 2008, Section 28 authorizes the Controller and Auditor General to carry out Performance Audit (Value-for-Money Audit) for the purposes of establishing the economy, efficiency and effectiveness of any expenditure or use of resources in the MDAs, LGAs and Public Authorities and other Bodies which involves enquiring, examining, investigating and reporting, as deemed necessary under the circumstances.

I have the honour to submit to His Excellency the President of the United Republic of Tanzania, Dr. John Pombe Magufuli and through him to the Parliament a Performance Audit Report on Compliance Monitoring and Enforcement of Environmental Policies, Laws and Regulations as Regards to Petroleum Exploration Activities in Tanzania.

The report contains conclusions and recommendations that directly concern the National Environmental Management Council (NEMC) and the Vice President’s Office (VPO) Directorate of Environment. VPO and NEMC have been given the opportunity to scrutinize the factual contents and comment on the draft report. I wish to acknowledge that the discussions with VPO and NEMC have been very useful and constructive.

My office intends to carry out a follow-up at an appropriate time regarding actions taken by the audited entities in relation to the recommendations in this report.

In completion of the assignment, the office subjected the report to the critical reviews of the following experts namely, Prof. Agnes E.G. Mwakaje of the University of Dar es salaam and Prof. Msafiri M. Jackson of Mwalimu Julius K. Nyerere University of Science and Technology, who came up with useful inputs on improving the output of this report.

This report has been prepared by Mr. Deogratius Shayo, Mr. Staford Kazyoba and Mr. Hiram Kisamo under the supervision and guidance of Mr. George C. Haule - Assistant Auditor General and Ms. Wendy W. Massoy - Deputy Auditor General.

I would like to thank my staff for their devotion and commitment in the preparation of this report. My thanks should also be extended to the audited entities for their fruitful interaction with my office.

Prof. Mussa Juma Assad
Controller and Auditor General
United Republic of Tanzania
March, 2016
## Contents

PREFACE .......................................................................................................................... i

LIST OF ABBREVIATIONS ................................................................................................... vi

MESSAGE FROM THE CONTROLLER AND AUDITOR GENERAL ................................ vii

EXECUTIVE SUMMARY .................................................................................................. x

CHAPTER ONE .................................................................................................................... 1

INTRODUCTION .................................................................................................................. 1

1.1 Background .................................................................................................................. 1

1.2 Justification for the Audit .......................................................................................... 1

1.3 Design of the audit ...................................................................................................... 3

1.3.1 Objective of the Audit ........................................................................................... 3

1.3.2 Scope of the Audit ................................................................................................. 4

1.3.3 Assessment criteria ............................................................................................... 5

1.4 Methods Used for the Audit ....................................................................................... 7

1.5 Data Validation Process .............................................................................................. 9

1.6 Standards used for the audit ...................................................................................... 9

1.7 Structure of the report ............................................................................................... 9

CHAPTER TWO .................................................................................................................. 10

SYSTEM FOR ENFORCEMENT OF ENVIRONMENTAL POLICIES, LAWS AND REGULATIONS IN PETROLEUM SECTOR IN TANZANIA ........................................... 10

2.1 Introduction ................................................................................................................ 10

2.2 Policy and Legal Framework ...................................................................................... 10

2.2.1 Environmental Policies ....................................................................................... 10

2.2.2 Environmental Laws, Regulations and Standards ............................................... 11

2.3 Key players in environmental enforcement and compliance in the country ............ 12

2.3.1 Vice President’s Office (VPO) – Division of Environment ..................................... 12

2.3.2 National Environmental Management Council (NEMC) ...................................... 13

The key functions of NEMC in respect to environmental enforcement and compliance in the country are: ........................................................................................................... 13

2.3.3 Relationship between DoE and NEMC ................................................................. 14
2.3.4 Ministry of Energy and Minerals (MEM) ................................................................. 15
2.3.5 Tanzania Petroleum Development Corporation (TPDC) ........................................ 15
2.3.6 Petroleum Explorations Companies ..................................................................... 16

2.4 Key process for preventing environmental impact on petroleum explorations activities ................................................................. 17

2.4.1 Acquiring of EIA report and award of EIA certificate ........................................ 18
2.4.2 Conducting an Environmental Management Plan (EMP) .................................. 18
2.4.3 Planning for inspection and enforcement activities ............................................. 19
2.4.4 Conducting Inspection to detect non-compliance by contractors ..................... 19
2.4.5 Reporting the Results of Inspections ................................................................. 20
2.4.6 Sanctioning the defaulters .................................................................................. 20
2.4.7 Reporting on enforcement .................................................................................. 21

2.5 Monitoring and evaluation of compliance and enforcement activities of petroleum exploration companies ................................................................. 21

2.5.1 Annual Environmental Audit ........................................................................... 21
2.5.2 Environmental Offences .................................................................................... 22

2.6 Prohibition to discharge hazardous substances, chemicals and materials or oil 23

2.7 Record Keeping ..................................................................................................... 23

CHAPTER THREE ........................................................................................................ 24

FINDINGS ...................................................................................................................... 24

3.1 Introduction ............................................................................................................ 24
3.2 Planning of inspection activities ............................................................................. 24

3.2.1 Inspection plan for environmental impact assessment review ............................. 24
3.2.2 Database of regulated entities ........................................................................... 26

3.3 Implementation of inspection activities .................................................................. 26

3.3.1 Coverage and extent of inspection .................................................................... 26
3.3.2 Review of environmental impact statement ....................................................... 28

3.4 Factors contributing to non-conduction of inspections in the petroleum exploration facilities .............................................................................. 30

3.4.1 Lack of planning system specifically for monitoring petroleum sector ......... 30
3.4.2 Lack of risk based inspection plan ............................................................ 31
3.4.3 Inspections of petroleum projects not given priority during the planning phase ................................................................. 32
3.5 Reporting on the inspection activities and status of compliance ............ 32
3.5.1 Adequacy of the inspection reports ..................................................... 32
3.5.3 Submission of compliance report from petroleum exploration companies to NEMC ................................................................. 33
3.5.4 Continuous reporting of enforcement performance by NEMC to VPO ...... 34
3.6 Coordination of reporting and Feedback among Key Stakeholders ........... 35
3.6.1 Environmental reports from Ministry of Energy and Minerals (MEM) .... 35
3.6.2 Coordination between VPO, NEMC, MEM and LGAs ............................ 36
3.7 Enforcement of environmental control systems in petroleum explorations .... 37
   Procedural mechanism of conducting enforcement .................................. 37
   Enforcement roles ................................................................................... 38
   Implementation of enforcement plans ..................................................... 38
3.7.3 Sanctions in case of non-compliance .................................................. 38
3.7.4 Follow-up on sanction imposed ....................................................... 39
3.8 Monitoring and Evaluation of inspection- and enforcement activities ....... 39
3.8.1 Monitoring and evaluation within NEMC .......................................... 39
3.8.2 Monitoring of NEMC’s performance conducted by the VPO and the Ministry .................................................................................. 40

CHAPTER FOUR ................................................................................................. 42
CONCLUSION ................................................................................................... 42
4.1 Introduction .............................................................................................. 42
4.2 Overall Conclusion .................................................................................. 42
4.3 Specific Conclusions ................................................................................ 42
   4.3.1 Insufficient planning of environmental inspections and enforcement in the petroleum exploration activities ........................................ 42
   4.3.2 Inadequate environmental inspections and enforcement in the petroleum exploration activities .......................................................... 43
   4.3.3 Insufficient Coordination between VPO, NEMC and MEM ............... 44
CHAPTER FIVE .................................................................................................................46
RECOMMENDATIONS ........................................................................................................46
  5.1 Introduction ..............................................................................................................46
  5.2 Recommendations to the National Environmental Management .......................46
      Council .........................................................................................................................46
  5.2.1 Planning for inspection and enforcement of environmental control systems in a petroleum sector ........................................................................................................46
  5.2.2 Enforcement, reporting, sanctioning and following-up .......................................47
  5.2.3 Monitoring and evaluation of enforcement activities .........................................48
  5.2.4 Recommendations to the Vice President’s Office – Directorate of Environment .................................................................................................................48
REFERENCES .....................................................................................................................49
Appendix 1: Responses from the Vice President’s Office ..............................................52
Appendix 2: Responses from the National Environmental .............................................56
Appendix 3: Audit Questions, Sub Questions and Audit Criteria used during the Audit 60
Appendix 4: Detailed Methodology approach of the Audit ............................................62
Appendix 5: List of oil and/or gas exploration companies operating in Tanzania 67
LIST OF ABBREVIATIONS

AERs    Annual Environmental Reports
CPU     Central Planning Unit
DECE    Directorate of Environmental Compliance and Enforcement
DEIA    Directorate of Environmental Impact Assessment
DEICO   Directorate of Environmental Information Communication and Outreach
DEPR    Directorate of Environmental Planning and Research
EIA     Environmental Impact Assessment
EIS     Environmental Impact Statement
EMA     Environmental Management Act
EMU     Environmental Management Unit
ESCAP   Energy Sector Capacity Building Project
GEF     Global Environment Facility
INTOSAI International Organization of Supreme Audit Institutions
ISSAI   International Standards For Supreme Audit Institutions
LGAs    Local Government Authorities
MEM     Ministry of Energy and Minerals
MPSA    Model Production Sharing Agreement
MTSP    Medium Term Strategic Plan
NEAC    National Environmental Advisory Committee
NEMC    National Environment Management Council
NEP     The National Environmental Policy
POPs    Persistent Organic Pollutants
PS-VPO  Permanent Secretary- Vice President’s Office
SBS     Supply Base Solution
SEA     Strategic Environmental Assessment
TEITI   Tanzania Extractive Industries Transparency Initiative
TPDC    Tanzania Petroleum Development Corporation
UNEP    United Nations Environmental Programme
VPO     The Vice President’s Office
VPO-DoE The Vice President’s Office-Directorate of Environment
MESSAGE FROM THE CONTROLLER AND AUDITOR GENERAL

Natural resources such as oil and natural gas are highly valuable in terms of revenue earnings and the subsequent contribution to the standard of living for Tanzanians. But oil and gas resources are finite: Over time, they will be depleted and cannot be replenished. This raises the important issues concerning inter-temporal management, that is, the consideration of inter-generational benefits.

The key issue is to ensure that resource exploitation pays attention to conservation and long-term sustainability, such that resource use by the present generation will not prevent future generations from enjoying a comparable level of benefits from the value created. This is where the issue of environmental protection comes in.

The extraction of hydrocarbons carries notable environment hazards and other risks. Currently, most of the hydrocarbon exploration activities in Tanzania are taking place offshore in the Indian Ocean and that is where large discoveries of natural gas have been made. Hence, it is imperative that the government manages the potential hazards and risks responsibly, with a view to avoid irreparable ecological damage to the fragile marine resources, in the course of hydrocarbons exploration and subsequent exploitation.

My office has audited the government’s environmental enforcement and I would like to raise a number of specific issues in this regard. During the audit, I have noted that implementation of the inspection activities was not satisfactory. This is because the planned inspections in most of the petroleum exploration activities failed to be implemented despite of the known risks to the environment.

First, sound knowledge of the environment and of resource economics is a necessary requirement in order to have the capacity to determine how to achieve a balance between preservation and use of an environment asset, with a view to maximize the present value of that asset over time.

The government should explicitly factor knowledge of environmental and social impacts into the decision-making process for petroleum exploration and development activities in the country. That will assist in mitigating the potentially significant damage to the country’s other forms of natural wealth: its ecosystems, including forests, rivers and land, as well as its social fabric. For example, I believe the government
must identify potential negative effects to the environment before granting specific extraction rights, so as to ascertain whether the country will get a good deal from extraction. In some cases it may be appropriate to defer operations until governance or technology improves, or until the environmental impact can be better assessed.

Second, if the government does grant rights, it should plan to mitigate the adverse consequences of extraction. In particular, the government should require international oil companies to present, and obtain approval for contingency plans in cases of emergency. These contingency plans should include the availability of equipment and expertise to manage accidents such as oil spills and other related environmental challenges. The government needs to ensure that such contingency plans are aligned with the project risks and that they are updated periodically throughout the life cycle of a project.

Third, there is the matter of ongoing monitoring of environmental pollution and social impacts. The government is responsible for setting and enforcing environmental standards (preferably in compliance with international standards) while the extractive company is usually in the best position to mitigate environmental damage. International Oil Companies may have only weak incentives to consider the environmental consequences of operations, unless the government makes it a condition of awarding the concession, with penalties attached. As it is impossible to predict all the potential costs, requiring developers to have systems in place to monitor and manage environmental and social impacts on an ongoing basis is just as important as the assessments conducted in project planning.

Related to this, I would like to advise the Government of the United Republic of Tanzania through the Vice President’s Office, National Environmental Management Council (NEMC), the Ministry of Energy and Minerals (MEM) and Tanzania Petroleum Development Corporation (TPDC) to enhance the enforcement of environmental policies, laws and regulations in the petroleum exploration and development activities. The Government has to come up with clearly set strategies for the enforcement of environmental control systems.

Fourth, the government should ensure that either it or the company sets aside funds for remediation. In any case, the policy should take into account that the project might develop differently than expected at the beginning especially if it turns out to be unprofitable or the license might be sold. Independent contractors, acquired on a
competitive basis, can be hired to undertake environmental operations such as reclamation.

Lastly, I believe the government should institute campaigns to raise public awareness. This should include public consultation and hearings between local communities, NGOs, public and private sectors before any exploration projects are allowed to proceed. Moreover, Environmental Impact Assessments conducted by exploration companies should be made available to the host LGAs for them to comment on before developments are allowed to proceed. These actions will maximize the identification of potential environmental risks which then could be mitigated to ensure safe resource extraction and minimize public complaints and outcry.

In concluding, I believe that resource extraction has many potential benefits for the country. However, it also has the potential to cause harm to the natural environment and people’s health. Therefore, the government has a duty to ensure that this negative potential does not become a reality and that addressing the issues raised above are of great importance.
EXECUTIVE SUMMARY

Conservation and management of the environment is very crucial to the country as it ensures safety and monitors how activities/projects are adding value to the environment in order to safeguard the quality of life aspired for Tanzanians. In order to achieve that, the National Environment Management Council (NEMC) has been mandated to enforce environmental policies, laws and regulations. It is the leading enforcement agency responsible for the protection of the environment and sustainable use of the natural resources in Tanzania.

Following adverse impact that Natural gas operations may have on the environment, health and safety of people such as gas flaring processing plants that emits carbon dioxide to the atmosphere, oil spills that have detrimental impacts to soils, surface and ground waters, and ecosystems including marine organisms, It has been necessary to audit the National Environmental Management Council (NEMC) and the Vice President’s Office (VPO) Directorate of Environment to find-out if they have effective processes and adequate capacity to ensure monitoring of compliance and enforcement with environmental requirement in the petroleum exploration activities.

The overall objective of the audit was to assess whether the Vice President’s Office (VPO) and the National Environmental Management Council (NEMC) have effective processes to ensure compliance with environmental policies, laws and regulations as regard to petroleum exploration activities in Tanzania.

The scope of the audit covered a period of five financial years i.e. 2010/11 to 2014/15 and was specifically on Compliance Monitoring and Enforcement of Environmental policies, laws and regulations as regards petroleum exploration activities in the country.

The conducted audit focused on Planning, Implementations of plans (carrying out inspections, enforcement, reporting, sanctioning, follow-up), coordination with other stakeholders and monitoring and evaluation with the aim of ascertaining whether VPO and NEMC are effectively performing their role of enforcing compliance with environmental policies, laws, and regulations on petroleum
explorations activities in Tanzania. The major focus was on offshore petroleum exploration activities.

NAOT used three main methods for data collection. Interviews and document reviews were done at Vice President Office, National Environment Management Council, Tanzania Petroleum Development Corporation (TPDC), Ministry of Energy and Minerals (MEM) and Local government authorities (Mtwara, Lindi and Kigoma). Physical site visits were made to Supply Base Solutions (SBS) at Mtwara Mikindani waste facilities treatment from exploration projects and Madimba Natural Gas Processing Plant in Mtwara.

Therefore this report contains findings, conclusions and recommendations of performance audit on Compliance monitoring and enforcement of environmental policies, laws and regulations regarding petroleum exploration activities in the country.

Main audit findings

From interviews, document reviews and physical visitation conducted, the following were the main audit findings noted during the audit. Full descriptions on these findings are obtained in chapter three of this report.

Lack of risk based inspection plan

It was noted that NEMC has not developed risk-based inspection plans to conduct inspections in a Petroleum exploration. Due to the fact that petroleum exploration projects are very complex especially for the off-shore projects which may have impact on habitat organisms and air pollution, we expected NEMC to have inspection plans to identify specific projects/facilities or activities based on risk factors or with high level of pollution to the environment. However, no inspections plans that were supposed to cover upstream petroleum exploration were mentioned in their respective annual work plans.

Due to absence of planning system NEMC could not prioritize risk areas for inspections that may have adverse impact to the environment.
**Inadequate database of regulated entities**

It was evident that, NEMC only maintain a list of all projects on which environmental impact assessment have been conducted and supplied with Environmental Impact Certificate (EIA Certificate) and not a comprehensive database on which environmental pollution data could be established and prioritized for risk-based action planning. Therefore, absence of complete and clear database of regulated entities could impose challenges for NEMC to plan for inspection activities in the petroleum exploration activities.

**Inadequate inspection conducted by NEMC**

For the period under review it was noted that NEMC carried out only 3 inspections out of 71 registered projects to check whether petroleum exploration companies consistently complied with environmental requirements. Due to the fact that there were inadequate inspections carried out, consequently there were poor enforcements, henceforth petroleum exploration companies could pollute the environment with impunity.

**Inadequate records of inspection reports**

A review of the inspection reports pointed-out that, NEMC did not have adequate record management processes and system to ensure that information from inspections is captured, processed and used to monitor the compliance with environment requirements in the petroleum sector.

The absence of inspection reports was mainly attributed by the fact that there were inadequate inspections carried out, consequently there were few enforcements imposed on environmental requirements in the petroleum sector.

**Non submission of enforcement reports by NEMC to VPO**

NEMC is required to prepare and submit to the Minister responsible for Environment within six months after the close of each financial year
annual reports\textsuperscript{1} which includes progress report, bi-annual implementation report and annual performance report regarding the status of implementation of the enforcement of environmental control systems in petroleum explorations.

Contrary to the requirement of EMA 2004, NEMC neither prepared nor submitted these reports as required for the whole period under audit. This makes it difficult for the VPO to underscore the performance of NEMC and NEMC itself has failed to establish whether its own performance meets its own objectives as set out in its Strategic Plan. Thus for this reasons, environmental compliance level of petroleum explorations facilities have not been reported so far.

\textbf{Insufficient Coordination between NEMC, VPO, MEM and LGAs}

It was evident that there was a insufficient coordination between NEMC and its stakeholders due to fact that no reports were submitted to NEMC for the whole period under review. Environmental inspectors and officers from the local government authorities and MEM did not submit environmental reports on petroleum exploration activities.

Consequently, coordination between NEMC and these government institutions was inadequate in connection with non-sharing of environmental information and absence of defined reporting mechanism between them. Therefore, the enforcement roles were unattained due to insufficient coordination on the roles played by each stakeholder.

\textbf{Inadequate Sanctions imposed}

Due to poor enforcement by NEMC and other stakeholders in the petroleum sector, NEMC had managed to impose only a single sanction in terms of a stop order to a Supply Base Solutions Company located at Mtwara Mikindani. The sanction was demanding reallocation of the company’s waste facilities to the alternative location due to complaints raised by the Mikindani residents\textsuperscript{1} regarding polluting the water pond.

\textsuperscript{1} EMA 2004 Section 17(2)
Inadequate monitoring of NEMC’S Performance by VPO

It was found that VPO lacks a comprehensive plan for monitoring the performance of NEMC on the issues of enforcement of environmental compliance as stipulated in EMA 2004. The audit also found out that the ministry, despite being the overall overseer of implementation of environmental enforcement, has not developed monitoring systems which could have been used as guidelines for monitoring the performance of NEMC, specifically in the petroleum sector.

Main Conclusion

The Vice President’s Office - Directorate of Environment (VPO - DoE) and the National Environmental Management Council (NEMC) did not have effective processes to ensure compliance and enforcement with environmental requirements in the petroleum explorations activities in the country as mandated by the Environmental Management Act, 2004. Generally, NEMC failed to undertake compliance monitoring and enforcement in the petroleum exploration facilities despite the fact it is an agent fully responsible for undertaking environmental enforcement activities in the county.

More over VPO via Directorate of Environment failed to monitor NEMC’s performance despite the fact that it is required to do the same as per EMA 2004.

There were no enforcement strategies for implementation of environmental control systems in the petroleum sector. Planning tools including strategic plans and annual work plans did not indicate strategies for environmental compliance and enforcement in petroleum explorations activities.

Main Recommendations

Recommendations to the Vice President’s Office - Directorate of Environment and National Environmental Management Council:

The Vice President’s Office - Directorate of Environment should ensure that:

1) environmental enforcement activities done by NEMC, Sector Ministries and LGAs are properly coordinated, harmonized and
that all stakeholders establish a firm reporting line of environmental matters;

2) a general environmental status report on petroleum sector in the country is prepared annually; and

3) it monitors NEMC’s performance on enforcement of the implementation of environmental control systems in the petroleum sector by regularly reviewing its performance as well as improving the NEMC’s capacity in meeting its overall enforcement objectives.

The National Environmental Management Council should:

1) establish performance standards or parameters for enforcement activities including carrying out risk assessment, developing enforcement manuals, guidelines, and delivery timeframes for each enforcement activity in the petroleum sector.

2) institute systems to ensure consistent enforcement of environmental control systems by carrying out routine, timely and prompt inspection- and enforcement activities rather than basing it on only reported incidents and/or complaints;

3) ensure that the sanctions imposed reflect the cost of actual destructions and restoration rather than just estimation of the destruction made by the defaulters;

4) make sure that information from MEM and TPDC regarding non-compliance of environmental standards is received timely and acted upon accordingly;

5) initiate the revision of all out-dated laws and regulations to enable effective enforcement of environmental standards in the petroleum sector; and

6) develop monitoring and evaluation indicators for enforcement of environmental control systems in the petroleum sector and ensure that they are established and approved and periodic monitoring and evaluation of enforcement activities is done accordingly and the results are used as the basis for further improvements.
CHAPTER ONE

INTRODUCTION

1.1 Background

Environmental management is among the key issues which require special attention by a country such as Tanzania as it strives to develop. Protection of the environment and sustainable use of natural resources will ensure safety and will add value to the environment and its people through achieving the quality of lives aspired for Tanzanians.

In this regard, the National Environment Management Council (NEMC) has been mandated to enforce environmental policies, laws and regulations. It is the leading enforcement agency responsible for the protection of the environment and the sustainable use of the natural resources. In implementing its responsibilities, NEMC has to consult and collaborate with other stakeholders dealing with environmental matters while engaging the public at large in Tanzania.

Essentially, oil and natural gas are fossil fuels that result from long-time decaying of a biomas. Projects for oil and natural gas extraction can be organized into four broad sectors: exploration and production (extraction) of crude oil and natural gas; transport; refining and marketing and distribution. All these steps produce a long list of air pollutants which includes toxic and hazardous materials, and emissions of hydrogen sulphide, a highly flammable and toxic gas.

The gaseous emissions above can impact negatively on health and safety of workers as well as marine ecology. Extraction of oil and natural gas can result into loss of huge stretches of marine habitats. Refineries too, emit pollutants into the air, water and land. Oil transportation accidents can result in catastrophic damage killing a number of fish, birds, other wildlife, plants and soil due to spills.

1.2 Justification for the Audit

Natural gas operations can have adverse effects on the environment and human habitat. The type of effects includes human health as well as survival of flora and fauna. For instance, petroleum industry in Nigeria flared 17.2 billion cubic metre per year of natural gas from exploration of crude oil. This emission has increased atmospheric
contaminants levels which lead to acidification of the soil due to acidic rain. This in turn depletes the soil and contributes to climate change and reduced agricultural yield\(^2\).

The climate change impact has been observed in Nigeria and also in other parts of the world.

Another example can be drawn from the Gulf of Mexico Oil Spill incidence which occurred in April 20, 2010 at the oil drilling rig Deepwater Horizon, operating in the Macondo Prospect in the Gulf of Mexico. The rig exploded and sank resulting in the death of 11 workers on the Deepwater Horizon. This was the largest recorded spill of oil in the history of marine oil drilling operations. 4 million barrels of oil flowed from the damaged Macondo well over an 87-day period. It was finally capped on July 15, 2010. Consequent impacts have been serious not only to Mexico but also to the neighboring countries.

Exploration and production of petroleum can be carried-out on-shore and/or off-shore. Both methods may have a number of negative impacts on the environment. The negative impacts include local detrimental impacts to soils, surface and ground waters, and ecosystems. These impacts can arise from related activities such as site clearance, construction of roads, tank batteries, brine pits and pipelines, and other land modifications necessary for the drilling of exploration and production wells and construction of production facilities. These negative impacts should be minimized\(^3\).

There has been public complaints and outcry on the water pollution in the pond which the residents at Mtwara-Mikindani depends on for their domestic consumption. The pollution has resulted from the petroleum operations that involves waste treatment by a plant that was built and placed nearby the pond\(^4\).

Moreover, the National Environmental Policy of 1997 defines the environmental framework for various sectors, including mining and


\(^3\) National Energy Policy 2003

\(^4\) Azam News at 2000HRS on 14th August 2015 under the heading “Uchimbaji wa gesi asilia baharini unalalamikiwa kuchafua mazingira Manispaa ya Mtwara Mikindani”.

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energy. The objectives of the National Environmental Policy include, among others: sustainability, security, and equitable use of resources to meet the basic needs of present and future generations, without risking health and safety. Another major objective is to prevent degradation of land, water, vegetation and air. The latter constitute the human being life support systems, and to conserve and enhance our natural and man-made heritage, including biological diversity of the ecosystem of Tanzania.\(^5\)

This report contains findings, conclusions and recommendations of performance audit on compliance monitoring and enforcement of environmental policies, laws and regulations regarding petroleum exploration activities in Tanzania as per the requirement of Section 18(2)(f) of EMA 2004.

1.3 Design of the audit

1.3.1 Objective of the Audit

The overall objective of the audit was to assess whether the Vice President’s Office (VPO) through DoE and the National Environment Management Council (NEMC) have effective processes to ensure compliance with environmental policies, laws and regulations as regards to petroleum exploration activities in Tanzania, and if such processes are implemented.

**Specific objectives of the Audit**

Based on the above audit objective, the audit has come up with the following specific audit objectives;

- assess whether DoE and NEMC have adequate risk based environmental enforcement plans for mitigating environmental impacts caused by petroleum activities;
- assess whether NEMC inspects, reports, sanctions or conducts follow-up on the implementation of environment control systems in the areas with petroleum exploration activities;
- assess whether DoE and NEMC adequately coordinate with other sector ministries, agencies, departments and other government institutions in environment conservation issues; and

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\(^5\) National Environmental Policy of 1997
assess whether DoE monitors the performance of NEMC and also how NEMC monitors its performance of enforcement to ensure compliance with environmental conditions on petroleum exploration activities.

1.3.2 Scope of the Audit

The audit focused mainly on monitoring compliance and enforcement of environmental policies, laws, and regulations on petroleum explorations activities in Tanzania. Areas audited include: planning system, implementation, coordination, monitoring and evaluation of environmental enforcement activities in the petroleum sector.

The audit was based in Dar es Salaam, Mtwara, Lindi and Kigoma regions.

In Dar es Salaam, data were collected from the Vice President’s Office (VPO), National Environmental Management Council (NEMC), and other key stakeholders such as the Ministry of Energy and Minerals (MEM), Tanzania Petroleum Development Corporation (TPDC) and Tanzania Extractive Industries Transparency Initiative (TEITI).

This audit focused on off-shore and on-shore activities. Mtwara and Lindi regions were visited due to the fact that majority of off-shore operations are taking place in these two regions, however Kigoma region was also visited where onshore activities are taking place.

The main audited entities were the Vice President’s Office-DoE and the National Environmental Management Council. The Vice President’s Office was selected due to the fact that it is responsible for addressing environmental issues at national level through its Directorate of Environment (DOE). The department executes ministerial functions in environmental management including approving and issuing certification of Environmental Impact Assessment. DoE also develops policies, laws and regulations related to environment.

The National Environmental Management Council is the corporate body, re-established in 2004 by the Environmental Management Act Cap.191 (EMA Cap 191) as a national environmental regulatory and enforcement institution responsible for overseeing management and protection of environment in the country. Furthermore, data were collected at the Ministry of Energy and Minerals (MEM) as it is a
concerned sector ministry. Information was further collected from TPDC, since it is the front line office in as far as issuing exploration license is concerned.

The study covered five financial years from 2010/11 up to 2014/15 so as to provide a clear and current picture of enforcement of compliance with environmental policies, laws and regulations on petroleum explorations activities in Tanzania.

1.3.3 Assessment criteria

In order to assess the performance of the Directorate of Environment DoE at VPO and National Environmental Management Council (NEMC) on the enforcement of environmental policies, laws and regulations; assessment criteria drawn from various sources were used. They were extracted from legislations, regulations, policies, guidelines and the best practices for the enforcement of environmental policies, laws and regulations.

The assessment criteria were on: planning for enforcement of environmental policies, laws and regulations, carrying out inspections, reporting on the results of inspections, provision of sanctions to defaulters as well as carrying out follow-ups on the imposed sanctions.

Planning of enforcement activities

Issues assessed in this area include: (i) inspection plans for EIA impact mitigation and monitoring (ii) risk-based inspection plans; and (iii) development of EIA database for the projects that have been issued with environmental certificate in the petroleum sector.

Requirements

Section 31 of EMA 2004 requires the National Environmental Management Council (NEMC) to develop plans, strategies, and targets to implement the National environmental policy as well as natural gas policy. The same is supposed to be done by the Ministry of Energy and Minerals.

On the other hand, Section 89(1) of the Environmental Management Act requires NEMC to identify possible environmental risks that are likely to affect the lives of the communities. Furthermore, in its 2010 - 2014 Strategic Plan, NEMC was expected to develop a comprehensive
EIA database management system that would assist in enforcement of environmental policy and law.

**Implementation of enforcement activities**

*Issues assessed in this area include:* (i) environmental inspections of petroleum exploration activities; (ii) reporting of inspections results; (3) applications of sanctions to defaulters; and (iv) follow-up on the implementation of the given recommendations and other interventions.

**Requirements**

Section 99 of EMA 2004 requires the Environmental Management Council (NEMC) to monitor and inspect any petroleum exploration activities conducted in the country. Similarly, it requires NEMC to check compliance with the environmental requirements of petroleum exploration activities. The same Act requires NEMC to report any contravention during petroleum explorations and impose sanctions accordingly. Therefore, upon issuance of the Environmental Inspection reports, NEMC is also required to verify that the corrective actions have been taken and the observed contravention has been adequately addressed.

**Coordination with other Enforcement agencies on environmental issues in petroleum exploration activities e.g. VPO and LGAs**

*Issues assessed in this area include:* (i) information reporting on enforcement of environmental compliance in petroleum exploration activities; and (ii) existing Memorandum of Understanding on enforcing the environmental compliance in petroleum exploration activities.

**Requirements**

EMA 2004 section 32 requires the Environmental Management Council (NEMC) to submit reports on implementation of its duties bi-annually to VPO about the state of the environment. Similarly, the same Act requires Local Government Authorities to submit bi-annual reports to both NEMC and VPO.
Monitoring and evaluation of inspections and enforcement activities

Issues assessed in this area include: (i) Monitoring by oversight body (ii) Entirely Performance monitoring by council itself

Requirements

Section 15(d) of EMA 2004 requires DoE to monitor and assess the NEMC’s activities to ensure that NEMC is discharging its duties of ensuring that environment is not degraded by any developmental activities. Similarly, the same Act calls for NEMC to monitor its performance and preparing report detailing its performance and submitting that report to DoE.

1.4 Methods Used for the Audit

Three main methods were used for data collections. These methods include: interviews, document reviews and observations through a number of physical visits made.

To ensure that the collected data provide a comprehensive picture of the situation in the entire country, data were collected in Dar Es Salaam from the Vice President’s Office (VPO), particularly the Directorate of Environment (DOE), National Environmental Management Council (NEMC), Tanzania Petroleum Development Corporation (TPDC), the Ministry of Energy and Minerals (MEM) and the three selected regions of Mtwara, Lindi and Kigoma where various petroleum exploration activities are going-on at the moment.

Interviews

Interviews were conducted in order to confirm or clarify information from the documents reviewed and to collect relevant information in cases where information in the formal documents was lacking or missing.

Officials from the Vice President’s Office - Directorate of Environment (VPO-DOE), National Environmental Management Council (NEMC), Tanzania Petroleum Development Corporation (TPDC) and the Ministry of Energy and Minerals (MEM) were interviewed in order to obtain overall knowledge on the enforcement of environmental policy, laws
and regulations as regards to petroleum exploration activities in Tanzania.

Those interviewed were selected on the basis of their responsibilities with regards to the enforcement of environmental policy, laws and regulations as far as petroleum exploration activities are concerned in Tanzania.

**Document Reviews**
During the course of the audit, various documents were reviewed in order to get information regarding enforcement of environmental policies, laws and regulations in petroleum exploration activities in Tanzania.

It was also used to verify information obtained through interviews and observations in the field. The documents reviewed fell within the five year period of the audit (2010/11-2014/15) because most of the relevant data and information have been generated during this period under review following massive discoveries of about 55 Trillion Cubic Feet of natural gas reserves in Tanzania.

The reviewed documents included: Environmental Impact Assessment Reports; and Annual progress report; Guidelines and manuals such as Environmental monitoring tools, Generic Waste Disposal, Procedures for Environmental Officers, National Environmental Investigation Manual and National Environment Investigation Manual; and planning documents such as Strategic Plans and Annual Work Plan and Budgets.

**Physical Observation**
The team managed to visit three regions of Lindi, Mtwara and Kigoma. The reason for visiting these regions was because petroleum activities are ongoing though at different levels of explorations and production.

Lindi and Mtwara regions were selected due to the fact that the two regions are the leading in the sector in terms of exploration and productions projects and most of the productions of natural gas so far are from these regions and there are a number of on-going explorations projects in the two regions.

While Kigoma was selected due to the fact that few companies have started exploration and will be a perfect representation of the areas which are still virgin in exploration of petroleum. The audit team planned to see measures in place in order to mitigate environmental impacts occasioned by petroleum exploration and productions
activities, for instance treatment facility for the waste produced during the exploration and productions phases.

1.5 Data Validation Process.

The Vice President’s Office (Directorate of Environment) and National Environmental Management Council were given the opportunity to go through the draft report and comment on the figures and information contained therein. They confirmed the accuracy of the data used and information presented in the audit report.

Furthermore, the information was crosschecked and discussed with experts in the field of Environment to ensure validation of the information obtained.

1.6 Standards used for the audit

The audit was conducted in accordance with International Standards for Supreme Audit Institutions (ISSAIs) used by the International Organization of Supreme Audit Institutions (INTOSAI).

These standards require that the audit is planned and performed in order to obtain sufficient and appropriate evidence to provide a reasonable basis for the findings and conclusions based on the audit objectives.

1.7 Structure of the report

The report covers the following:

Chapter one provides the background of the audit, audit objective, scope, assessment criteria and methodology of the audit. Chapter two provides the detailed account of the system and processes for the enforcement of environmental policies, laws, and regulations as regards to petroleum activities in Tanzania, whereby the responsibilities of different key players in the enforcement of environmental policies, laws, and regulations are described.

Chapter three presents the audit findings on the enforcement of environmental policies, laws and regulations. Chapter four provides audit conclusions and Chapter five outlines audit recommendations for implementation in order to improve the current situation.
CHAPTER TWO

SYSTEM FOR ENFORCEMENT OF ENVIRONMENTAL POLICIES, LAWS AND REGULATIONS IN PETROLEUM SECTOR IN TANZANIA

2.1 Introduction

This chapter provides a description related to enforcement of environmental policies, laws and regulations in the petroleum sector in Tanzania. It also provides details of key players and their legal mandate and responsibilities. Also, it outlines key processes of enforcement of environmental laws in petroleum explorations activities in Tanzania.

2.2 Policy and Legal Framework

Petroleum explorations activities in Tanzania are governed by various policies, laws and regulations used for administering and managing the sector.

2.2.1 Environmental Policies

The National Environmental Policy (NEP) of 1997 provides the overall framework for environmental planning and management in the country. NEP is supported by sectorial policies such as National Energy Policy of 2003, National Natural Gas Policy of 2013. These policies provide directions on the environmental governance and management in the petroleum sector. Table 2.1 summarizes areas of the two policies focusing on the petroleum sector.
Table 2.1: Policies in Petroleum Sector in relation to Environmental Protection in Tanzania

<table>
<thead>
<tr>
<th>Policy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The National Environmental Policy, 1997</td>
<td>Emphasize conservation of biological diversity and control causes for significant reduction or loss of biological diversity(^6)</td>
</tr>
<tr>
<td>The National Natural Gas Policy of Tanzania, 2013</td>
<td>Requires stakeholders to:</td>
</tr>
<tr>
<td></td>
<td>(i) Ensure that human health, safety, as well as environmental and biodiversity issues are mainstreamed into all operations of the natural gas value chain;</td>
</tr>
<tr>
<td></td>
<td>(ii) Ensure compliance to health, safety and environmental protection as well as best practice in the industry; and</td>
</tr>
<tr>
<td></td>
<td>(iii) Ensure establishment and operations of disaster management systems to prevent and mitigate adverse impact on natural gas operations.</td>
</tr>
<tr>
<td>The National Energy Policy, 2003</td>
<td><strong>Policy Statements</strong></td>
</tr>
<tr>
<td></td>
<td>i) Promote environmental impact assessment as a requirement for all energy programmes and projects.</td>
</tr>
<tr>
<td></td>
<td>ii) Promote energy efficiency and conservation as a means towards clean production and pollution control measures.</td>
</tr>
</tbody>
</table>

2.2.2 Environmental Laws, Regulations and Standards

For the purpose of ensuring environmental control in the petroleum sector, there are established laws, regulations and standards to govern and give directions to any project establishment in this sector.

*Environmental Laws*

The main environmental law which governs all environmental matters in the country including petroleum exploration activities, is the Environmental Management Act No. 20 of 2004. This law specifies matters to be adhered to in the implementation of various activities with regards to environmental protection. It also lay down roles of different stakeholders. Furthermore, it provides framework for its enforcement to ensure prevention, control and compliance to the environmental requirements.

\(^6\) National Environmental Policy, 1997, Sec. 32
Environmental Regulations
There are two main regulations that govern the environmental enforcement activities. These are (1) the Environmental Management Regulations of 2005 - which provide practical details regarding the implementation of Environmental Management Act; and (2) the Environmental Impact Assessment and Audit Regulations of 2005 - which guide EIA process in Tanzania.

Environmental Standards and Guidelines
Tanzania National Environmental Standards Compendium is the main standards. It provides guidance to decision makers and developers on minimum acceptable levels to be adhered to. Energy sector environmental impact assessment guidelines are the main environmental protection tool in this sector. This tool guides EIA practice, including mitigation measures, monitoring protocol as well as climate change issues.

2.3 Key players in environmental enforcement and compliance in the country

2.3.1 Vice President’s Office (VPO) - Division of Environment

The VPO is primarily responsible for the development of policies and guidelines which are necessary for the promotion, protection and sustainable management of the environment in Tanzania.

Its duties are:
- issue general guidelines to the sector ministries, government departments, NEMC, National Environmental Advisory Committee (NEAC), City, Municipal or District Environmental Management Committees, Agencies or any other public or private institution; and
- monitor and coordinate the performance of National Environmental Management Council (NEMC).
- responsible for coordination of national and international matters which are related to environmental conservation and management in Tanzania.

The Division is led by a Director and comprises of three Sections as follows:
**Environmental Natural Habitats Conservation:** This section is responsible for developing, reviewing and coordinating implementation of environmental policies, acts, regulations, guidelines, programmes and strategies which are related to natural habitats and environmental conservation.

**Environmental Pollution Management:** The section is charged with the preparation, review and provision of advice on policies, legislation and guidelines that are related to environmental management of pollution.

**Environmental Impact Assessment:** The main responsibilities of this section is to prepare and review environmental management policies, legislatives, regulations, guidelines, criteria and procedures for environmental impact assessments, risk assessments and Strategic Environmental Assessments. Some of the specific areas of focus include approval of Environmental Impact Statement (EIS) and Strategic Environmental Assessment (SEA).

### 2.3.2 National Environmental Management Council (NEMC)

The National Environmental Management Council is the corporate body, re-established in 2004 by the Environmental Management Act Cap.191 (EMA Cap 191) as a national environmental regulatory and enforcement institution responsible for overseeing management and protection of environment in the country.

**NEMC’s mission**

NEMC’s mission is “to promote environmental management in Tanzania through coordination, facilitation, awareness raising, enforcement, assessment, monitoring and research”.

The key functions of NEMC in respect to environmental enforcement and compliance in the country are:

- conduct inspections to various facilities to ensure that the facilities comply with the requirements given to them either through various legislations or through the conditions provided in their EIA certificates;
- enforce and ensure the compliance of the national environmental quality standards;
- coordinate with other key stakeholders in addressing all issues pertaining to environmental management; and
issuance of administrative notices and prosecution.

**NEMC organization structure**
NEMC is organized in the following four main Directorates;

a) Directorate of Environmental Compliance and Enforcement (DECE);
b) Directorate of Environmental Impact Assessment (DEIA);
c) Directorate of Environmental Information Communication and Outreach (DEICO); and
d) Directorate of Environmental Planning and Research (DEPR).

The responsibility of conducting enforcement and implementation of the environmental control measures in petroleum exploration activities lies in the Directorate of Environmental Compliance and Enforcement (DECE). Within this directorate there are three sections namely; Environmental Monitoring, Environmental Compliance and Environmental Enforcement.

**Environmental Monitoring Section:** This section is responsible for routine monitoring of air, water bodies and soil to determine their qualities in relation to laid down national and international environmental standards. The report from this section is used by the Compliance and Monitoring Section to determine if there is significant pollution that needs to be regulated.

**Environmental Compliance Section:** This section is mainly responsible for conducting routine inspections to various projects to ensure that the projects comply with the requirements given to them either through various legislations or through the conditions provided in their EIA certificates. The information from this unit is used by Environmental Enforcement Unit to act upon the situation.

**Environmental Enforcement Section:** It is in this section that all formal procedures stipulated by the Act are executed, including issuance of administrative notices and prosecution. This unit gets the information of non-compliance from Environmental Compliance Unit which uses this information to take action upon the offenders.

2.3.3 Relationship between DoE and NEMC

The Vice President’s Office - Division of Environment is charged with the responsibility of overseeing all issues related to environment in
the country. Therefore, NEMC reports to the VPO-Division of Environment.
According to Section 17(2) of EMA 2004, NEMC is required to prepare and submit to the VPO-Division of Environment bi-annual reports regarding implementation of the provisions of EMA 2004 and fulfill the objectives and the purpose for which it was established.

2.3.4 Ministry of Energy and Minerals (MEM)

MEM has a primary function of ensuring that all environmental matters contained in the National Natural Gas Policy of 2013, the National Energy Policy of 2003 and any other written policy or law on petroleum explorations which focuses on environment are implemented and reports of their implementation are submitted to the Director of Environment of Vice President’s Office and Director General of National Environmental Management Council (NEMC).

MEM is also responsible for handling explorations conflicts and providing public awareness on petroleum explorations activities in the country. MEM implements its environmental related matters through its Environmental Management Unit.

Environmental Management Unit (EMU) in MEM

The Unit coordinates environmental issues with other stakeholders in the energy and minerals sectors, and initiates environmental audits. It also oversees the environmental database and monitors management programs in the energy and minerals sectors in collaboration with the National Environmental Management Council (NEMC).

The unit monitors environmental protections compliance in exploration projects for oil, gas and minerals. It also monitors environmental protection compliance in petroleum and gas storage and transportation

2.3.5 Tanzania Petroleum Development Corporation (TPDC)

Through TPDC, the Ministry of Energy and Minerals implements its petroleum exploration and development policies.

7 ibid
Tanzania Petroleum Development Corporation is required to enforce the following:

- Ensuring that contractors comply with the health, safety and environmental requirements under the Environmental Management Act (2004) and the Occupational, Safety & Health Act (2003); and
- Prior to relinquishment of any area, the contractor performs all necessary abandonment, decommissioning and site cleanup activities to restore the area as nearly as possible, to the condition in which it existed at the start of the project, including removal of such facilities, equipment or installations as the Minister may instruct, and shall take action necessary to prevent hazards to human life, property and the environment which may be caused by its facilities, equipment or installations.

2.3.6 Petroleum Explorations Companies

These are companies licensed to undertake exploration and production of petroleum products (Refer Appendix Five). They are termed as “Contractors” in the Model Production Sharing Agreement.

The Contractor is required to ensure that anyone performing work for him, either personally through employees or subcontractors shall comply with the health, safety and environmental requirements under the Environmental Management Act (2004) and the Occupational, Safety & Health Act (2003).

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8 Modal Production Sharing Agreement (2013)
2.4 Key process for preventing environmental impact on petroleum explorations activities

The process for preventing environmental impact on petroleum explorations in Tanzania starts with conducting Environmental Impact Assessment (EIA) by the project operator thereafter the same is subjected to review by the National Environmental Management Council (NEMC). After the review and approval the Operator is entitled to get Environmental Certificate from the Minister of Environment. The certificate comes with the conditions attached into it and the operator is required to prepare Environmental Management Plan explaining how the execution of the project will abide with the environmental policies, laws and regulations; and adhere to the
conditions given in the environmental certificate. The EMA 2004 provides that after the above obligations are fulfilled, NEMC is required to prepare Inspection Plan and conduct inspection. The inspection carried out by NEMC will determine compliance or non-compliance. Enforcement plan will be put in place and implemented. NEMC will then make follow up to establish whether order issued have been complied with. Once the institution/project operator has passed through this process, it can make self-evaluation of its functions to see its performance.

2.4.1 Acquiring of EIA report and award of EIA certificate

The contractor is required to undertake the EIA as per Environmental Management Act 2004 (section 81) for the purpose of predicting the consequences of the proposed petroleum exploration project to the people’s property and people livelihoods and health in the nearby communities. Also, the contractor is required to prepare Environmental Management plan which reveal mitigation measures to identify environmental impacts during and after the life span of the project. Appendix 1.0 of the Act indicate list of issued EIA/EA certificate by sector (i.e. energy sector) from 2010/11 to 2014/15 as per reviewed documents from Directorate of Environmental Impact Assessment (DEIA) at NEMC.

2.4.2 Conducting an Environmental Management Plan (EMP)

An Environmental Management Plan is prepared to show the commitment of the contractor in implementing the mitigation measures found in the Environmental Impact Statement ((EIS). The contractor is required to prepare a plan or programmes that seeks to achieve the required end state and describes how activities, that have or could have an adverse impact on the environment, will be mitigated, controlled, and monitored.

The aim of EMP is to ensure:

- application of best practice in environmental management of the project;
- the implementation of a project’s EIA including its conditions of approval;

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9 Exploration company
• compliance with environmental legislation; and
• that environmental risks associated with a project are properly managed.

2.4.3 Planning for inspection and enforcement activities

Inspection and enforcement plans provide a basis for assigning the priorities based on risk and allocate the available resource accordingly. A systematic risk-based approach is employed on allocating greater resource to assess compliance of facilities that carry out complex operations, facilities with significant emission to the offshore or onshore environment, facilities with poor environmental performance and facilities that are located within the proximity to high and sensitive pollution receiving environment.

EMA 2004\textsuperscript{10} requires NEMC in collaboration with the VPO, Director of Environment to prepare in every five years a National Environment Action Plan for a segment of environment whose nature of activity may have impact on the environment. The action plan should provide general guidance for the management and protection of the environment and natural resources.

The responsibility for planning for enforcement activities at the National Environment Management Council is under the Directorate of Planning and Research (DEPR) - Planning Unit in collaboration with Directorate of Environmental Compliance and Enforcement (DECE), Directorate of Environmental Impact Assessment (DEIA) and other Directorates within NEMC.

2.4.4 Conducting Inspection to detect non-compliance by contractors

According to the requirements of Section 88(1) of EMA 2004 and UNEP\textsuperscript{11} enforcement guidelines, the outputs from the Planning Unit are to be used by the Directorate of Environmental Compliance and Enforcement in conducting environmental inspections. The inspectors are supposed to conduct inspection activities to prioritized projects. Also the frequency of inspection should focus on such projects which had been identified in the plans to be of high risk.

\textbf{Ad-hoc Inspection}

\textsuperscript{10} Section 44(1)
\textsuperscript{11} United Nation Environmental Programme
The National Environmental Management Council (NEMC) through its Directorate of Environmental Compliance and Enforcement is given a task to carry out ad-hoc inspection to check on operators who are not complying with environmental requirement given to them either through various legislations or through the conditions provided to them in their EIA certificates.

When a firm is found guilty, the Council through its section of enforcement issuance the administrative notices and prosecution.

2.4.5 Reporting the Results of Inspections

In response to NEMC’s Standard Operating Procedures (SOP’s), the information from inspection reports is regarded as one of the monitoring tools used by the Environmental Enforcement Section under the Directorate of Environmental Enforcement and Compliance for detection of weaknesses and act upon the situation in order to remedy the situation from non-compliance into compliance or issue penalties.

2.4.6 Sanctioning the defaulters

As per EMA 2004\(^{12}\) where the results of monitoring compliance indicate non-compliance with the Environmental Impact Assessment, the holder of the Environmental Impact Assessment certificate may be required;

(a) to take a reasonable measures to mitigate the impact of such non-compliance and report such measures to the Council\(^{13}\); or

(b) to pay a fine imposed by way of administrative measure by the Council for such non-compliance.

In addition the Council may recommend to the Minister for revocation of an Environmental Impact Assessment certificate if the results of an additional monitoring indicate persistent non-compliance with the conditions stipulated in the Environmental Impact Statement certificate and the Council may institute proceedings in a court of law for damages for any injury that may have occurred as a result of such non-compliance.

\(^{12}\) Section 100(1)

\(^{13}\) The council means the National Environmental Management Council (NEMC)
2.4.7 Reporting on enforcement

Reporting is important in ensuring that there is monitoring and evaluation of planned activities. According to NEMC’s strategic plan 2010-2014 there are three categories that are involved in reporting. This include: type, frequency of reporting and consumers of the reports. Table 2.4 shows types of reports that are to be produced and their frequency.

Table 2.4: Types of reports on enforcement which are produced and their frequency

<table>
<thead>
<tr>
<th>Type</th>
<th>Frequency</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Budget and Budget speech</td>
<td>Annually</td>
<td>Parliament, NEMC Board, Treasury, stakeholders</td>
</tr>
<tr>
<td>Progress report</td>
<td>Quarterly</td>
<td>PS-VPO, NEMC Board, Treasury, PMO, Development partners</td>
</tr>
<tr>
<td>Bi-annual Implementation Report</td>
<td>Semi-Annually</td>
<td>Ministry of State, Vice President’s Office, Union Affairs and Environment, PS-VPO, NEMC Board</td>
</tr>
<tr>
<td>Annual Report and Audited Account</td>
<td>Annually</td>
<td>Parliament, NEMC Board VPO, Controller and Auditor General, stakeholders.</td>
</tr>
<tr>
<td>Annual Performance report</td>
<td>Annually</td>
<td>NEMC Board, VPO and Parliament</td>
</tr>
<tr>
<td>Ministry’s visit report</td>
<td>Annually</td>
<td>Parliament, PS, Minister responsible for environment.</td>
</tr>
<tr>
<td>Project Review Report</td>
<td>Annually</td>
<td>Development Partners, FAO, International Financial Institution such as Word Bank Group,</td>
</tr>
</tbody>
</table>

Source: NEMC’s strategic plan 2010-2014 and 2014-2018

2.5 Monitoring and evaluation of compliance and enforcement activities of petroleum exploration companies

2.5.1 Annual Environmental Audit

The Council is responsible for carrying out the environmental audit in respect to petroleum companies. According to section 101 of Environmental Management Act of 2004, the Council must carry out bi-annual environmental audits to ensure that all projects being implemented are in compliance with the Act and any conditions set out by the Agency on the EIA certificate. The audits focus on the implementation of conditions set out in the Environmental Management Plan (EMP) that is contained in the EIA report.
During an environmental audit of an exploration site, the Council inspects the operator’s facilities and processes to determine compliance with the EIA regulations on environmental management.

Areas of focus in an environmental audit include among others:

- Infrastructure in place at the project site and its compliance with the conditions set out in the EIA report.
- Any additions to the infrastructure and whether the exploration company had informed the Council through submission of an addendum to the EIA report.
- Availability of a current and comprehensive Environmental Management Plan (EMP).
- Levels of adherence with the Environmental Management Plan. The Act classifies adherence to the EMP on 3 levels, which are; holistic, partial adherence and no adherence.
- Identification of any waste pollution generating activities at the project site. In this evaluation, the Agency identifies whether there are any hazardous substances or wastes as well as dust or air emissions.

### 2.5.2 Environmental Offences

After making the above assessments, if the inspector identifies any non-compliance with regulations or the EMP, the inspector makes an order in writing to the exploration company requiring that they take such measures as are specified in the order for the prevention of harm to the environment and for the correction of the effects of the non-compliance. In addition to the issuing of an order, the inspector may impose a fine on the exploration company.

According to section 187 of Environmental Management Act of 2004, any person who discharges any dangerous material, substance, oil, oil mixture into land, water, air or aquatic environment or pollutes the environment or discharges the pollutant into the environment contrary to the Act, shall be guilty to an offence and liable to a fine not less than three million shillings but not exceeding fifty million shillings or to imprisonment for a term not exceeding twenty years, or to both.
2.6 Prohibition to discharge hazardous substances, chemicals and materials or oil

A person who discharges any hazardous substance, chemical, oil or a mixture containing oil in any waters or any other segment of the environment commits an offence. Apart from the general punishment provided under the Environmental Management Act (2004), the person convicted of an offence under the Act may be ordered by the court to pay the cost of the removal, including any costs which may be incurred by the Government or Government agency in the restoration of the environment damaged or destroyed as a result of the discharge; and to pay the cost of third parties in the form of reparation, restoration, restitution or to compensation as may he determined by a court.\textsuperscript{14}

2.7 Record Keeping

According to Environmental Management Act 2004, NEMC is required to maintain a register of all licenses issued and submit the record to the Director of Environment at the interval of six months.

\textsuperscript{14} EMA (2004) Section 110(1)(2)
CHAPTER THREE

FINDINGS

3.1 Introduction

This chapter presents findings on the performance of the VPO, NEMC, MEM and TPDC in enforcing the compliance with environmental requirement on petroleum exploration activities to protect the environment against pollution caused by exploration activities. The findings focus on enforcement planning, its implementation and evaluation.

Key issues covered in this chapter are: inspection planning, conducting inspections, reporting of inspection result, sanctioning of defaulters, coordination among enforcement regulatory, monitoring and evaluating and reporting on performance of enforcement activities on petroleum exploration activities in the country.

3.2 Planning of inspection activities

3.2.1 Inspection plan for environmental impact assessment review

The inspection plan provides a basis for assigning priorities based on risk and allocating the available resources accordingly. The audit team reviewed the NEMC’s work plans under audit scope from 2010/11 to 2014/15 financial years to check whether it has planned for inspections activities in petroleum upstream operation based on the risk levels of environmental pollution of various facilities.

It was noted that NEMC has not developed risk-based inspection plans to conduct inspections in a petroleum exploration. This was due to the fact that petroleum exploration projects are very complex especially for the off-shore projects which may have impact on habitat organisms and air quality. NEMC was expected to have inspection plans which would identify specific projects/facilities or activities based on risk factors with high level of pollution to the environment. NEMC did not
have inspections plans covering upstream petroleum exploration in its annual work plans.

On the other hand, auditors did not come across any document that set clear priorities for inspection of petroleum exploration. For example, no priority was given to off-shore or on-shore explorations which may have adverse results in emissions that impacts upon marine ecology, as well as water and air quality. This is especially relevant when considering areas with close proximity to highly sensitive locations as identified by UNEP\textsuperscript{15}. Also, the plan was silent on matters such as number of exploration sites that were required to be inspected and how often inspections should be conducted.

Interviews held with NEMC officials together with review of the strategic plan and annual work plans indicated that, the reasons for not planning inspections in the upstream petroleum exploration based on risk factors and prioritization was attributed to lack of tools and equipment. Furthermore it was claimed that petroleum sector is still new; and thus NEMC currently focuses on capacity building in terms of technical know-how and that, petroleum exploration in Tanzania is mainly pursued by International Oil Companies which are highly obliged to comply with international requirements such as UNEP and World Bank environmental standards.

Equally, through interviews held with NEMC’s officials, it was noted that exploration companies use advanced technology in handling emissions and thus not much attention is required in terms of monitoring and inspection, as it is assumed that they are in compliance.

Moreover, it was found that, in the absence of inspection plan, NEMC cannot prioritize risk areas for inspections and that, such areas may have adverse impact to the environment.

\textsuperscript{15} United Nations Environmental Programmes
3.2.2 Database of regulated entities

The auditors were expecting that NEMC would have in place a database for petroleum exploration companies with details such as location of these companies, various equipment or tools used during exploration, chemicals used, sensitivity of marine ecology, dates showing when they were visited and priority areas planned for future monitoring due to high risks of their operations.

However, it was evident that, NEMC only maintain a list of projects on which environmental impact assessment have been conducted and supplied with Environmental Impact Certificate (EIA Certificate). A comprehensive database on which environmental pollution data could be established and prioritized for risk-based action planning was lacking. Follow up on the implementation of environmental management plan, mitigation measures, inspection plan and monitoring of environmental quality were lacking.

On that note, NEMC was found to lack comprehensive database for all the Petroleum Explorations Companies operating in the country. This was caused by inadequate allocation of human resources and financial resources to accomplish the task. As such there is no specific staff and budget set aside for monitoring activities in petroleum industry. It was further noted that the absence of complete and clear database of regulated entities had made it more difficult for NEMC to plan for inspection.

3.3 Implementation of inspection activities

3.3.1 Coverage and extent of inspection

With reference to NEMC’s Strategic Plan 2011 to 2014, the council is required to conduct routine and incidental inspection for environmental monitoring and enforcement on annual basis. NEMC is therefore expected to conduct inspections in order to ascertain the level of compliance to environmental conditions set during EIA
certification by petroleum exploration companies and identify non-compliance with environmental requirements.

Through the review of NEMC’s general inspection files and interviews with the Director of Compliance and Enforcement it was noted that, NEMC carried-out three inspections to check whether petroleum exploration companies consistently complied with environmental conditions. These were inspections on the offshore (Rig) visit (Mronge - 1) located in exploration block 2 in the Indian Ocean under Statoil16, oil spill response exercise conducted in collaboration with Statoil17 and on the Supply Base Solution Waste Management Facility in Mtwara - Mikindani18. SBS waste management facility is the facility responsible for treatment of wastes produced during explorations activities by various exploration companies.

Table 3.1 shows the number of registered oil and gas projects compared to number of inspected projects for the period from 2010/11 to 2014/15

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of projects registered</th>
<th>Number of projects inspected</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>11</td>
<td>NIL</td>
</tr>
<tr>
<td>2011</td>
<td>11</td>
<td>NIL</td>
</tr>
<tr>
<td>2012</td>
<td>18</td>
<td>NIL</td>
</tr>
<tr>
<td>2013</td>
<td>7</td>
<td>NIL</td>
</tr>
<tr>
<td>2014</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>2015</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: NEMC’s Status of registered oil and gas projects for undertaking environmental impact assessment and environmental audit from 2010 to October 2015 and auditors’ analysis

16 Report on the offshore (Rig) visit and gas exploration projects in the Indian Ocean with Statoil
17 Report for the oil spill response exercise conducted in collaboration with Statoil
18 Inspection reports for the Supply Base Solution (SBS) waste management facility in Mtwara of July, 2014 and December 2015
As shown in Table 3.1, during the period of five financial years under this audit, NEMC conducted only three inspections of registered oil and gas projects in the country.

Following the review of NEMC’s status of registered oil gas projects, annual work plans, general inspection reports as well as interviews with DECE, it was noted that this situation was attributed due to inadequate capacity in terms of oil and gas expertise as well as insufficient tools and equipment for carrying out inspections specifically in the off-shore projects.

Due to those reasons the audit team established that during the 5 year period only three of the petroleum (oil and gas) projects were inspected by NEMC out of the currently existing 71 companies.

As a result the audit team could not establish the inspection’s performance for the petroleum projects to ensure compliance monitoring and enforcement of environmental policies, laws and regulation of the petroleum exploration projects in the country. As such there were no adequate inspections and consequently there are no enforcements, implying that petroleum exploration companies could be polluting the environment with impunity, and thereby risking human life safety and the ecology.

Moreover, upon review of NEMC’s annual work plans for the same period under audit no inspection plans for registered oil and gas projects in the country were found.

3.3.2 Review of environmental impact statement

As per Section 87(1) of EMA 2004, NEMC is required within sixty days following submission of environmental impact statement to carry out its review. Table 3.2 shows reviews performed by NEMC through its Directorate of Environmental Impact Assessment for the period between 2010 and 2015.
Table 3.2: Schedule of environmental impact statement review performed by NEMC for the years 2010/11 to 2014/15

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of projects reviewed</th>
<th>Number of Projects required to be reviewed</th>
<th>%age of projects Reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>9</td>
<td>11</td>
<td>82</td>
</tr>
<tr>
<td>2011</td>
<td>7</td>
<td>11</td>
<td>64</td>
</tr>
<tr>
<td>2012</td>
<td>10</td>
<td>18</td>
<td>56</td>
</tr>
<tr>
<td>2013</td>
<td>7</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>2014</td>
<td>6</td>
<td>16</td>
<td>38</td>
</tr>
<tr>
<td>2015*</td>
<td>8</td>
<td>8</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: NEMC’s Status of registered oil and gas projects for undertaking environmental impact assessment reviews from 2010 to October, 2015 and auditors’ analysis

Table 3.2 indicates that from 2010 to 2012 more than 50 percent of oil and gas projects were reviewed following submission of environmental impact statement in the given year. For the period between 2013 and 2015 all projects required to be reviewed were reviewed making all oil and gas projects reviewed in the respective years. During the year 2014 only 6 projects out of 16 were reviewed making 38 percent of reviewed projects, the lowest of them all.

Upon discussions with environmental impact assessment officials at NEMC - HQ, they pointed out that some delays for the review of environmental impact statement was attributed by delay of submission of Environmental Impact Statement (EIS) from petroleum companies through their environmental consultants. The environmental consultants are required to abide with terms of reference while conducting environmental impact assessment, however sometimes some of the consultants do not abide with TOR especially on completion time and submission dates to NEMC.

However, from the above analysis it was noted that NEMC to a large extent is conducting reviews in terms of reviewing the environmental impact statement upon submission. This is evidenced by the fact that

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19 Until 31 October 2015
at least 80 percent of EIA statements were reviewed per year under this audit scope. The results of the review can draw attention to the areas with high environmental risk that may require inspections before further process of issuing EIA certificate.

3.4 Factors contributing to non-conduction of inspections in the petroleum exploration facilities

The auditors were able to establish the factors that contributed to lack of inspections in the petroleum explorations facilities in the country. The following factors were pointed-out through the interviews held with NEMC officials as well as from reviewed plans, inspection reports and progress reports.

3.4.1 Lack of planning system specifically for monitoring petroleum sector

According to interviews held with NEMC’s officials at Head Office, one of the factors contributing to lack of routine environmental inspections at petroleum exploration facilities as well as reviews of work plans is lack of planning system specifically to monitor this sector through routine inspections, environmental audit and monitoring compliance with environmental requirement by exploration companies for both off-shore and on-shore explorations projects.

It was furthermore noted that this challenge is mainly caused by lack of adequate human capacity, lack of inspections tools, complexity of the petroleum industry, difficult logistics required to reach the exploration sites and setting aside a deficit budgetary allocation for inspections and auditing of petroleum exploration activities.

It was explained that due to these challenges narrated above, NEMC is currently in the process of preparing plans specifically devoted to monitor the petroleum sector. It is also in the process of undertaking capacity building through participating in a capacity building project called Energy Sector Capacity Building Project (ESCAP) which is under the Ministry of Energy and Minerals that aims to identify human capacity gaps in the petroleum sector.
Moreover, NEMC has focused on upstream capacity building through the on-going three years project started in 2013, called Oil for Development that is funded by the Norwegian government. In terms of tools and equipment, NEMC has a new laboratory building and it is currently in the process of procuring equipment for testing samples.

### 3.4.2 Lack of risk based inspection plan

Through Results from the interviews held with NEMC’s officials as well as reviews of NEMC’s annual work plans under the period of audit, it was noted that NEMC lack risk-based inspection plans and that it uses the general strategic plans for all the sectors. Instead, NEMC is only planning for incidental inspections in responding to complaints raised by the affected citizens in regards to the operations of a particular petroleum exploration project.

Since petroleum exploration activities are carried-out on either on-shore or off-shore there might be a serious impact to the marine organisms such as fish and whales, mangrove destructions and water pollution which are very difficult to be tracked by NEMC through this method of incidental inspections.

Due to this challenge it was observed that there is a potential risk for many of the projects including those located on off-shore to remain un-inspected for a number of years because ad-hoc inspection system in place is not adequately fit in the petroleum explorations activities. Such an approach would ensure compliance with environmental policies, laws and regulations in petroleum explorations.

In the long run, the inability to inspect this sector for which some of the projects may pose high risk to the marine ecology, water and air quality due to the fact that these are complex projects with complex operations, could destroy marine organisms and could lead to human health risks resulting from consumption of polluted products in case the uninspected exploration facilities violate the environmental requirements.
3.4.3 Inspections of petroleum projects not given priority during the planning phase

Results from this exercise also showed that petroleum projects were not given priority as other sectors like mining during the planning phase. It was noted that NEMC believe that this sector is still new and it is at infancy stage, so it does not need much attention compared to other sectors like mining, forestry and wildlife management.

It was further noted that little or no effort was placed by NEMC in terms of allocation of resources and enhancing capacity needed to monitor and enforce compliance with environmental requirement to the petroleum exploration activities in the country.

3.5 Reporting on the inspection activities and status of compliance

According to NEMC’s Environmental Investigation Manual of 2012\textsuperscript{20}, once inspectors have carried-out any inspection activities, they shall prepare and submit an inspection report. In addition, UNEP guidelines for national enforcement and compliance environmental requirement\textsuperscript{21}, requires the agency with environmental enforcement duties to have a mechanism which allows inspections to be reported and documented.

3.5.1 Adequacy of the inspection reports

A review of the inspection reports from NEMC pointed-out that, NEMC did not have adequate record management processes and system to ensure that information from inspections is captured, properly processed and used to monitor the compliance with environment requirements in the petroleum sector.

The reason for this is due to the fact that NEMC did not maintain on-going consolidated inspection performance information about which sites have been inspected, what was found, and what action was taken as the result of inspection by either the council itself or any other

\textsuperscript{20} Paragraph 3.5
\textsuperscript{21} 27 Dated 9 February 2001
enforcement agent. Upon request of documents we noted that, many of the inspection reports were not available.

As noted, auditors reviewed some of the inspection reports and pointed-out two important points, namely:

i. Inadequate record management processes - this situation can be solved by the establishment of inspection performance information system of which most of its data will be sourced from NEMC petroleum environmental database (Central Environmental Information System); and

ii. Improper structure for capturing and reporting - establish standard inspection/ auditing template tailored for auditing the petroleum sector which can be used nationwide.

The inadequacy of inspection reports was mainly attributed to the fact that there were few inspections carried-out, consequently there are insufficient-enforcement of policies, laws and regulations in the petroleum sector.

3.5.3 Submission of compliance report from petroleum exploration companies to NEMC

Annual Environmental Reports (AERs) are a key source of information about explorations facilities compliance with environmental conditions and environmental management plan, hence should be carefully reviewed by NEMC. AERs can include the information about planned environmental management activities, self-reported noncompliance and corrective action. Submitting an AER is a condition for all petroleum exploration companies under the Model Production Sharing Agreement (MPSA) 2013. They also include the information showing the adherence to the mitigation of shortfalls found during the inspection.

According to the interviews held with NEMC’s enforcement and compliance officials, NEMC received reports from exploration companies showing adherence to environmental management plan.

However, NEMC was unable to provide documents showing adherence to environmental management plan by exploration companies.
3.5.4 Continuous reporting of enforcement performance by NEMC to VPO

NEMC is required to prepare and submit annual report to the Minister responsible for Environment within six months after the close of each financial year. The report\(^{22}\) provide the status in regard to enforcement of environmental control system in petroleum explorations.

NEMC is required to prepare and submit three reports to the Minister and the Director of Environment. Table 3.3 shows the types of reports which are to be submitted to VPO and their submission status.

Table 3.5: Type of Reports required and their frequencies from 2010 to 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of report to be submitted</th>
<th>Produced</th>
<th>Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1. Progress Report</td>
<td>No(^{23})</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>2. Bi-annual implementation report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>3. Annual Performance Report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2011</td>
<td>1. Progress Report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>2. Bi-annual implementation report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>3. Annual Performance Report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2012</td>
<td>1. Progress Report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>2. Bi-annual implementation report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>3. Annual Performance Report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2013</td>
<td>1. Progress Report</td>
<td>No</td>
<td>No</td>
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<tr>
<td></td>
<td>2. Bi-annual implementation report</td>
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<tr>
<td></td>
<td>3. Annual Performance Report</td>
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<tr>
<td>2014</td>
<td>1. Progress Report</td>
<td>No</td>
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<td></td>
<td>2. Bi-annual implementation report</td>
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<td>3. Annual Performance Report</td>
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<td>2015</td>
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<td></td>
<td>2. Bi-annual implementation report</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>3. Annual Performance Report</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: Analysis of Progress reports, Implementation reports and Performance reports

\(^{22}\) EMA 2004 Section 17(2)

\(^{23}\) "NO" or "YES" referring to a situation whereas NEMC was supposed to prepare and submit the relevant reports to VPO.
Whilst it is required by law to prepare and submit reports to the Director of Environment (VPO), NEMC neither prepared nor submitted these reports as required for the whole period under audit (See Table 3.3 above).

This makes it difficult for the VPO to underscore the performance of NEMC and NEMC itself has failed to establish whether its performance meets its own objectives as set out in its Strategic Plan. Thus for this reason, environmental compliance level of petroleum explorations facilities have not been reported so far.

3.6 Coordination of reporting and Feedback among Key Stakeholders

Compliance monitoring through inspection and enforcement involves coordination with other stakeholders in regards to activities performed by them in the aspects of environmental management in the petroleum sector. It is useful having information from key stakeholders who conducted similar inspection to the petroleum companies.

For instance, the information from MEM (Environmental Management Unit) and LGAs were very useful as they could help NEMC when identifying the exploration facility that needs to be inspected. Environmental information from other stakeholders may be used as a benchmark for NEMC to plan and conduct environmental enforcement for a particular year.

3.6.1 Environmental reports from Ministry of Energy and Minerals (MEM)

The auditors noted that MEM through its Agency - TPDC and its Environmental Management Unit, is quite aware of on-going environmental impacts resulting from petroleum exploration activities in both on-shore and off-shore explorations. This was noted through interviews held with TPDC’s Environmental Unit officials and MEM’s Environmental Management Unit officials. They pointed-out that exploration activities might cause destructions to mangrove development, fish production habitats and also to Whales disturbance.
MEM through its Environmental Management Unit (EMU) and TPDC is required to prepare the bi-annual report and submit the same to the Vice President’s Office - Director of Environment concerning the state of that segment of the environment and the systems adopted by that sector’s Ministry to maintain or improve the environment.

Upon interviews held with NEMC and VPO officials, they pointed out that, MEM through its EMU has not submitted any environmental reports to VPO and NEMC as stipulated in the Act. Similarly, NEMC officials pointed out that, NEMC requested them to submit those reports but are yet to do so.

The main reasons for non-submission of annual and monitoring reports pointed out by NEMC and VPO officials during the interviews include lack of awareness and reluctance on the part of the responsible MDAs and LGAs. It was further added that, the Ministry responsible for Environmental Affairs is mandated under the Environmental Management Act to ensure that MEM and NEMC are properly reporting to enhance the enforcement of the control systems.

3.6.2 Coordination between VPO, NEMC, MEM and LGAs

As per Section 26 of EMA 2004, NEMC may delegate to sector Ministry, environmental management body, or agent, to exercise its functions or duties in order to achieve its set objective of enforcing environmental compliance in the petroleum sector. It is through this way that NEMC can coordinate with other ministries and agencies in the enforcement of environmental issues. These sector ministries and agencies include the Ministry of Energy and Minerals through its department responsible for Environment and Local Government Authorities.

Through the interviews that were held with Director of DECE and officers from DEIA it was evident that there were no reports submitted to NEMC for the whole period under review. Environmental inspectors and officers from the Local Government Authorities and MEM were not submitting environmental reports on petroleum exploration activities. Therefore, the audit team could not verify any reports which were submitted to NEMC’s head office.

\[24\] 31 EMA 2004 section 32(a)
Through reviews of Annual Work Plans and Annual Progress Reports, as well as interviews held with officials from NEMC, VPO and MEM, it was obvious that coordination between NEMC and these government institutions was inadequate. There was no sharing of environmental information and the absence of defined reporting mechanism between them. Consequently, the enforcement cannot be fully attained due to poor coordination on the roles played by these stakeholders.

3.7 Enforcement of environmental control systems in petroleum explorations

According to Environmental Management Act of 2004,(17),(1) the objective and purpose for which NEMC is established is to undertake enforcement, compliance, review and monitoring of environmental impact assessment and in that regard, has to facilitate public participation in environmental decision-making, and exercise general supervision and coordination over all matters relating to the environment assigned to the council.

3.7.1 Planning enforcement

NEMC and the Ministry of Energy and Minerals are supposed to develop enforcement plans to implement the National Environmental Policy of 1997 as well as Natural Gas Policy of 2013.

Through review of general inspection plans, the auditors noted that the council did not plan for enforcement on petroleum sector henceforth the observed non-execution of enforcement activities.

3.7.2 Implementing enforcement

Procedural mechanism of conducting enforcement

Procedural mechanism of conducting enforcement generally is in place to guide the conduct of inspections, followed by promoting compliance, thereafter sanctions are imposed for the non-complier. There is also a National Environmental Investigation Manual in use as a guide. These are the general procedures; we found out that there was no clear defined procedure or mechanism of conducting enforcement specifically in the petroleum sector.
**Enforcement roles**

National Environmental Management Council enforcement roles are clearly defined in the National Environmental Management Act 2004, also enforcement guidelines as an internal document that helps in defining the roles, and with the assistance of legal unit there is a check mechanism in place in making sure that the council does not act ultra vires in discharging their duties.

**Implementation of enforcement plans**

We expected NEMC to implement its enforcement plans in the petroleum sector and by doing so the council will be living up to the objective of its establishment.

Through interviews held with NEMC’s officials dealing with compliance and enforcement it was revealed that NEMC does not implement enforcement plans/requirements effectively as implementation of the same are dependent on the availability of funds from treasury and they have not been funded properly. The generated funds from penalties and fines have not been able to rescue the situation.

**3.7.3 Sanctions in case of non-compliance**

It was expected that NEMC will impose sanctions whenever non-compliance has been detected.

In the petroleum sector the only environmental pollution that had consequences for a petroleum company is the incidence reported in Mikindani Area in Mtwara Municipality where Supply Base Solutions Company (SBS) a company charged with the responsibility of disposing of petroleum explorations wastes from the off-shores operations was detected to pollute water pond which residents use for domestic consumptions.

The Council issued compliance order to SBS Company to redress the situation and thereafter the company decided to relocate the plant from Mtwara to Lindi region as a means to comply with the Council’s directives.
3.7.4 Follow-up on sanction imposed

We expected NEMC to make an effective follow-up on sanctions imposed by them. This is according to NEMC’s Strategic Plan 2010 - 2014.

National Environmental Management Council generally do make follow up after imposing sanctions in order to make sure that its orders are being observed as stipulated. The results from interviews with officials from NEMC and review of the monitoring reports from NEMC showed that there has been follow up on sanctions imposed in the petroleum sector for only the SBS waste management facility inspected.

3.8 Monitoring and Evaluation of inspection- and enforcement activities

3.8.1 Monitoring and evaluation within NEMC

According to NEMC’s Strategic Plan (2010 - 2014) the Central Planning Unit (CPU) is supposed to conduct monitoring and evaluate their performance. By the end of each year, NEMC is supposed to examine what they had set out to achieve in their annual work plan, how much has been achieved, reasons for non-achievement and prepare monitoring reports. However, during the interviews with CPU Officials, it was found that NEMC has not conducted monitoring and evaluation exercise to assess the performance of inspection- and enforcement activities in the petroleum sector.

There were no bi-annual or annual monitoring reports prepared during period under review. This is attributed to the fact that the Council did not have monitoring and evaluation manual. However, at the time of the audits we found out that the Council was working on the preparation of a monitoring and evaluation manual.

It was also noted that failure to monitor performance of enforcement activities against the set enforcement targets denied NEMC an opportunity to establish whether they are performing well or lagging behind the established specific objectives and to act accordingly.
3.8.2 Monitoring of NEMC’s performance conducted by the VPO and the Ministry

Monitoring and evaluation in the petroleum sector are critical processes in ensuring that strategic objectives and intermediate goals of VPO in monitoring the sector are met.

This part focuses on how VPO conducts monitoring and evaluation of environmental enforcement activities in the petroleum sector in the country as conducted by NEMC. It includes how the Ministry responsible for environment plans the monitoring and evaluation of NEMC’s performance, sets the criteria used for evaluation, explains how it is conducted and what remedial actions should be taken on the evaluations conducted.

**Inadequate monitoring of NEMC’s Performance by VPO**

It was found that, VPO lacks a comprehensive plan for monitoring the performance of NEMC on the issues of enforcement of environmental compliance as stipulated in EMA 2004. The audit also found out that the ministry, despite being the overseer of implementation of environmental enforcement compliance, has not developed monitoring system which could have been used as guidelines for monitoring the performance of NEMC specifically in the petroleum sector.

Equally, there was no documented statement in the Ministry’s Strategic Plan detailing the overall objectives, strategies and priorities for monitoring NEMC’s operations.

Lack of monitoring plans has hindered the Ministry from having reliable information for guiding NEMC and ensuring enforcement of laws and regulations which would have brought about compliance.

According to EMA 2004, Ministerial Responsibilities Statement of 2010 and review of VPO’s Strategic Plans, it was noted that VPO has a primary role in monitoring and evaluating the performance of NEMC’s activities.

The review of the VPO’s Medium Term Strategic Plan of 2011-2016 (MTSP) and Monitoring and Evaluation Plans as indicated in the MTSP showed that VPO did not set out the key performance indicators for assessing NEMC’s enforcement activities. Furthermore, interviews held with VPO officials indicated that no monitoring and evaluation was
carried out to assess NEMC’s performance in environmental enforcement in petroleum sector.

Reasons for failure to conduct such monitoring for NEMC’s activities were lack of well documented monitoring guidelines or manuals which are tailored specifically for petroleum activities; lack of monitoring indicators specifically with regards to NEMC’s environmental enforcement performance; lack of prioritization of monitoring activities within VPO and its departments, in particular in respect of petroleum sector as one of the key environmental aspects whose enforcement is required to be regularly monitored.

The impact of not monitoring NEMC’s environmental enforcement performance is that VPO lacked well analyzed information to enable them to take proper actions or decision. VPO was also not able to assess the systems for actual performance of NEMC based on actual input of resources injected in the environmental enforcement activities against the actual output resulting from NEMC’s enforcement activities.

The VPO therefore could not assess whether NEMC’s environmental enforcement objectives were actually met.
CHAPTER FOUR

CONCLUSION

4.1 Introduction

This chapter draws the audit conclusion based on the findings presented in the previous chapter.

4.2 Overall Conclusion

Based on the findings, the auditors concluded that the Vice President’s Office - Directorate of Environment (VPO - DoE) and the National Environmental Management Council (NEMC) lack effective process and capacity to ensure compliance monitoring and enforcement of environmental requirements in the petroleum explorations activities in the country.

This is mainly because of lack of planning, inspections, enforcement and follow-up mechanism of environmental policies, laws and regulations in the petroleum sector. NEMC has failed to plan, inspect and enforce on petroleum explorations facilities despite the fact that it is an Institution legally mandated to do this.

Insufficient capacity in terms of technical know-how, tools and equipment together with budgetary limitations are the main reasons for this poor performance.

4.3 Specific Conclusions

4.3.1 Insufficient planning of environmental inspections and enforcement in the petroleum exploration activities

Based on the auditor’s findings, the auditors concluded that planning for inspections and enforcement of environmental policies, laws and regulations in the petroleum exploration activities was not done. Moreover, there were no strategies set out for implementation of inspections and enforcement of environmental control system in the petroleum sector.

This is a matter of concern because the explorations activities are risky as they lead to environment hazards such as air pollution, degradation of marine ecology. Due to absence of planning, the
Council has failed to allocate required resources for inspections, enforcement and follow-up on explorations facilities in the country.

Moreover, due to absence of planning system, the Council has failed to identify and prioritize the risky exploration sites which require continuous inspection and enforcement for effective and continuous monitoring of explorations projects for the whole period under review. The Auditors further concluded that due to the notion by NEMC that this industry is still at infancy stage in terms of capacity building, the Council has not taken necessary measures to include the petroleum sector in its planning system compared to other sectors like mining and wildlife management.

4.3.2 Inadequate environmental inspections and enforcement in the petroleum exploration activities

**Inspections:** It is concluded that NEMC conducted inspections only on ad-hoc basis; in a case where it has not received any complaints or on incidents where no inspections were conducted. Despite the fact that it is difficult for this approach to be relevant in the petroleum sector since most of projects are operated on off-shore where no people live, NEMC has still not adopted other alternative ways of conducting inspection.

The audit exercise concludes that implementation of the inspection activities was not satisfactory. This is because inspection in most of the petroleum exploration activities failed to be implemented despite of the known risks to the environment. This put the biodiversity, human and environment in general in danger due to the environmental pollution and degradation that might occur as a result of exploration activities.

Other contributing factors are: non conduction of inspections in the petroleum exploration facilities because of lack of planning system for monitoring petroleum sector, lack of risk based inspection plan and inspections of petroleum projects and giving low priority to this sector in the planning phase.

All these factors if addressed well and timely could assist in improving the current situation as far as environmental enforcement of petroleum exploration activities in the country is concerned.

**Sanctions and follow-up:** The sanctions imposed by NEMC did not reflect the actual destruction made by the defaulter, due to lack of
standard measurement of the actual destruction made to the environment by the defaulter, thus making it easier for the defaulters paying the fines and continue on committing the same environmental offences.

The study found no evidence of follow-up to ensure environmental compliance as there were no identified enforceable petroleum exploration facilities that would have required a follow-up. For the case of Mikindani incidence, the defaulter (SBS) being fined was not directly linked to the exploration facilities since it was a negligence of the waste management company as an agent for waste disposal of exploration companies.

**Reporting:** The audit found no reporting of environmental issues by other agencies to and by NEMC as an institution solely responsible for environmental enforcements. Despite the fact that MEM is required to report to NEMC on any environmental activity done there were no reports submitted for the whole period under review.

NEMC’s quarterly performance reports and annual progress reports were not submitted to VPO as required by EMA 2004. The consequence of this is that VPO does not adequately evaluate the performance of NEMC and how NEMC has achieved its enforcement objectives during the year.

**Documentation and record keeping:** NEMC maintains a database list of all projects which issued EIA certificate. However there is no proper documentation of all Petroleum Companies.

4.3.3 Insufficient Coordination between VPO, NEMC and MEM

**Coordination between VPO, NEMC, MEM and LGAs**

It was concluded that there was insufficient coordination in the enforcement of environmental requirement between NEMC, VPO, MEM and LGAs.

**Coordination between NEMC and VPO:**

It was concluded that there was insufficient coordination between NEMC and VPO due to the fact auditors failed to get evidence concerning sharing of information and reports submitted to VPO by NEMC as required by section 17(2) of EMA 2004.
Coordination between NEMC and MEM:
It was concluded that NEMC does not have clear coordination and reporting systems with MEM. Despite the fact that MEM has an environmental management unit, there was no information regarding implementation of environmental enforcement in the petroleum explorations activities that was submitted to NEMC for reporting and enforcement actions.

Coordination between NEMC and LGAs:
The auditors concluded that the coordination between NEMC and LGAs was inadequate due to non-sharing of information between them and LGAs not submitting the reports to NEMC as required by Section 36 of EMA 2004.

4.3.4 Lack of Monitoring and Evaluation of inspection and enforcement activities

The audit concluded that there is lack of monitoring and evaluation of environmental inspection and enforcement of petroleum exploration activities conducted by the National Environmental Management Council to the facilities. This is because NEMC failed to put in place adequate monitoring and evaluation indicators, established plans and lack of manual or guidance to guide the planning, execution and reporting the results of the monitoring and evaluation of inspection and monitoring activities executed by NEMC.

Lack of monitoring and evaluation denied NEMC and the government as a whole an opportunity to ensure compliance with environmental conditions on petroleum activities in the country.

On the other hand, it was concluded that the Vice President’s Office has failed to monitor the performance of NEMC as far as environmental inspection and enforcement of petroleum exploration activities is concerned. Therefore, VPO as the main overseer of NEMC’s activities as well as environmental matters in the country do not have a clear picture of the actual performance of NEMC on this specific critical area.
CHAPTER FIVE

RECOMMENDATIONS

5.1 Introduction

The audit findings and conclusions indicated that there are weaknesses by NEMC in the planning, inspections and enforcement activities that were designed to ensure compliance with environmental requirement.

The weaknesses were noted in planning for inspections and enforcement activities, as well as conducting inspections and enforcement, reporting, sanctioning and following-up.

This chapter therefore provides recommendations to the Vice President’s Office - Directorate of Environment as well as the National Environmental Management Council on what should be done in order to address the weaknesses and thus improve performance in enforcement issues.

The audit office is of the view that, once these recommendations are fully implemented there is going to be an improvement in the way VPO and NEMC together with other sector ministries enforce the implementation of environmental control systems in the petroleum sector thus mitigate environmental risk and improve compliance with environmental standards.

5.2 Recommendations to the National Environmental Management Council

5.2.1 Planning for inspection and enforcement of environmental control systems in a petroleum sector

The National Environmental Management Council should:

(1) undertake proper analysis to establish performance profiles of those exploration projects whose enforcement is vital with the view of establishing the compliance level of each of the exploration projects and use such information as the basis for planning enforcement; and
(2) establish performance standards or parameters for enforcement activities including carrying out risk assessment, developing enforcement manuals, guidelines, and setting timeframes for each enforcement activity in the petroleum sector.

5.2.2 Enforcement, reporting, sanctioning and following-up

The National Environmental Management Council should:

(1) institute systems to ensure consistent enforcement of environmental control systems by carrying out routine, timely and prompt inspections and enforcement activities rather than depending on working on ad-hoc based on reported incidents;

(2) establish inspection performance information system of which most of its data will be sourced from NEMC petroleum environmental database (Central Environmental Information System);

(3) establish standard inspection/ auditing template which can be used nationwide tailored for auditing the petroleum sector;

(4) ensure that the sanctions imposed reflect the cost of actual destructions and restoration rather than just estimation of the destruction made by the defaulters;

(5) make sure that information from MEM and TPDC regarding non-compliance of environmental standards are received timely and acted upon accordingly;

(6) initiate the review process of all out-dated laws and regulations to enable effective enforcement of environmental standards in the petroleum sector; and

(7) ensure that Directorate of Environmental Impact Assessment (DEIA) establishes a data base system which will be updating the Directorate of Environmental Compliance and Enforcement (DECE) with the information about petroleum exploration companies that have undertaken EIA or EA or exploration companies without EIA certificate.
5.2.3 Monitoring and evaluation of enforcement activities

The National Environmental Management Council should ensure that:

(1) it establishes and approves monitoring and evaluation indicators for enforcement of environmental control systems in the petroleum sector, periodic monitoring and evaluation of enforcement activities is done accordingly and the results are used as the basis for further improvements; and

(2) all reports resulting from environmental enforcement activities from zonal offices, LGAs or other sector ministries as received are properly scrutinized to determine deficiency and provide feedback to the concerned officials for corrective actions and further improvements.

5.2.4 Recommendations to the Vice President’s Office - Directorate of Environment

The Vice President’s Office - Directorate of Environment should ensure that:

(1) environmental enforcement activities which are carried out by NEMC, Sector Ministries and LGAs are properly coordinated, harmonized and that all stakeholders establish a firm reporting line of environmental matters;

(2) a general environmental status report on petroleum sector in the country is prepared annually. An annual compilation of reports on environmental enforcement roles in the petroleum sector as carried out by other government departments are made available and used for assessing enforcement of performance annually and be the basis for further improvements;

(3) it monitors NEMC’s performance on enforcement of the implementation of environmental control systems in the petroleum sector by regularly reviewing its performance as well as improving the NEMC’s capacity in meeting its overall enforcement objectives; and

(4) it sets up clear policies and enforcement guidelines that will be tailor-made specifically to the monitoring of the petroleum sector in the country.
REFERENCES


APPENDICES
Appendix 1: Responses from the Vice President’s Office - Directorate of Environment (VPO - DoE)

A: Overall Responses

Generally, the recommendations are genuine.

B: Specific Responses

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendation</th>
<th>VPO’s Comment(s)</th>
<th>Action(s) to be taken</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Environmental enforcement activities which are carried out by NEMC, Sector Ministries and LGAs are properly coordinated, harmonized and that all stakeholders establish a firm reporting line of environmental matters</td>
<td>The recommendation is Genuine</td>
<td>To be strengthened further and establish a firm reporting line</td>
<td>2017/18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. The Environmental Management Act has put in place Institutional framework where, among others, it has directed establishment of Sector Environment Sections in Sectors and Environment Management Units in LGAs. Some of their responsibilities are to ensure compliance by sector Ministry and LGAs as per EMA and that all environmental matters contained in other laws falling under their jurisdictions are implemented and submitted to the Director of Environment. They are also required to liaise with DoE and DG-NEMC on matters with respect to which cooperation or shared responsibility is required under EMA.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>2. EMA has also put in place a reporting line where each sector ministry as well as the Local Government Authorities are required to prepare State of the Environment in their areas and submit them to the DoE for compilation and later come out with the National State of the Environment Report as well as contributing to the Global Environment Outlook. Furthermore, DoE has prepared National Environment Plan for which</td>
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<tr>
<td>No.</td>
<td>Recommendation</td>
<td>VPO’s Comment(s)</td>
<td>Action(s) to be taken</td>
<td>Timeline</td>
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</table>
| 1.  | EMA requires the DoE to prepare country’s State of the Environment Report which is supposed to be tabled before the National Assembly every after two (2) years. The contents of the report include all environmental issues including oil and gas. However, the Sector Ministry responsible for petroleum issues is supposed to submit state of petroleum in the country to DoE as a contribution to the National State of the Environment Report. However, as an internal arrangement, the Petroleum Sector may produce their own reports annually. | The recommendation is Genuine  
1. EMA requires the DoE to prepare country’s State of the Environment Report which is supposed to be tabled before the National Assembly every after two (2) years. The contents of the report include all environmental issues including oil and gas. However, the Sector Ministry responsible for petroleum issues is supposed to submit state of petroleum in the country to DoE as a contribution to the National State of the Environment Report. However, as an internal arrangement, the Petroleum Sector may produce their own reports annually.  
2. It should be noted that NEMC and the Environment Officers in the Local Government Authorities are mandated to carry out enforcement and compliance on environmental issues including petroleum sector in the country. As mentioned, implementation reports are submitted to DoE | To be strengthened further. | 2017/18 |
<p>| 2.  | A general environmental status report on petroleum sector in the country is prepared annually. An annual compilation of reports on environmental enforcement roles in the petroleum sector as carried out by other government departments are made available and used for assessing enforcement of performance annually and be the basis for further improvements | To be strengthened further. | 2017/18 |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendation</th>
<th>VPO’s Comment(s)</th>
<th>Action(s) to be taken</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Monitors NEMC’s performance on enforcement of the implementation of environmental control systems in the petroleum sector by regularly reviewing its performance as well as improving the NEMC’s capacity in meeting its overall enforcement objectives</td>
<td><strong>The recommendation is Genuine</strong>&lt;br&gt;1. It should be noted that there is a sector responsible for Petroleum issues. NEMC comes in when new projects are proposed by guiding on implementation of EIA processes. Also, NEMC is responsible for monitoring performance of the projects in line with the monitoring plans. In addition, it should be noted also that EIA covers all newly proposed projects and it is not confined to Petroleum sector only&lt;br&gt;2. NEMC has its arrangements for internal Capacity needs assessments. This is usually included in the annual plans and budgets.</td>
<td>To be strengthened further</td>
<td>2017/18</td>
</tr>
<tr>
<td>4.</td>
<td>Sets up clear policies and enforcement guidelines that will be tailor-made specifically to the monitoring of the petroleum sector in the country</td>
<td><strong>The recommendation is Genuine</strong>&lt;br&gt;1. The Environmental Management Policy has identified 6 key environmental challenges including pollution, which may arise from various sources including petroleum sector.&lt;br&gt;2. The Environmental Management Act and its Regulations (EIA &amp;A; Fees and Charges, etc) have put in place enforcement procedures to be adhered to in</td>
<td>To be strengthened further</td>
<td>2017/18</td>
</tr>
<tr>
<td>No.</td>
<td>Recommendation</td>
<td>VPO’s Comment(s)</td>
<td>Action(s) to be taken</td>
<td>Timeline</td>
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<tr>
<td></td>
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<td>implementation of projects, including petroleum projects.</td>
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<tr>
<td></td>
<td></td>
<td>3. EIA guidelines have been finalized. Pollution from petroleum projects has been captured.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. As mentioned above, NEMC and Local Government Authorities are mandated to ensure enforcement of pollution issues including that arising from the petroleum sector. It should be noted further that the Sector responsible for petroleum issues is required by law to ensure all petroleum projects are implemented is safe environment by conducting regular monitoring exercises.</td>
<td></td>
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</tbody>
</table>
Appendix 2: Responses from the National Environmental Management Council (NEMC)

A: Overall Responses

Petroleum resource management issues in Tanzania have emerged very recently. The Petroleum Act of 2015, which has been enacted last year, regulates upstream, midstream and downstream petroleum activities. Through its Sections 216 -218, it recognizes EMA Cap 191 on environmental management. Consequently, the exploitation activities have to be effectively managed by the Government. The exploitation should result in lasting benefits for the nation, in effect transforming the valuable assets in the underground into assets which will benefit the present and future generations. Based on the environmental legislation, the following need to be addressed: - appropriate and capable institutions as well as procedures to manage, effective enforcement, capacity building and technology transfer, adequate resources both human and financial, retooling, effective coordination among relevant stakeholders, and awareness raising.

B: Specific Responses

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendation</th>
<th>NEMC’s Comment(s)</th>
<th>Action(s) to be taken</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Undertake proper analysis to establish performance profiles of those exploration projects whose enforcement is vital with the view of establishing the compliance level of each of the exploration projects and use such information as the basis for planning enforcement</td>
<td>Already in place EIA data base. Comprehensive EIA data base in final stages of completion.</td>
<td>Improve the current EIA data base. Collect data from other regulators and actors within gas and oil sector. Harmonize the collected data</td>
<td>July 2016 to June 2017</td>
</tr>
<tr>
<td>2.</td>
<td>Establish performance standards or parameters for enforcement activities including carrying out risk assessment,</td>
<td>Tools already in place for environmental compliance and enforcement:-</td>
<td>Develop: Parameters to be monitored in petroleum resources and</td>
<td>July 2016 to June 2017</td>
</tr>
<tr>
<td>No.</td>
<td>Recommendation</td>
<td>NEMC’s Comment(s)</td>
<td>Action(s) to be taken</td>
<td>Timeline</td>
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<td></td>
<td>developing enforcement manuals, guidelines, and setting timeframes for each enforcement activity in the petroleum sector</td>
<td>Guidelines for environmental monitoring and inspections; Site specific procedure for environmental inspection; National environment investigation manual; and Guidelines on determination of penalties to imposed against offences related to EIA and environmental pollution and protection violations</td>
<td>respective guidelines on procedures to carry out environmental inspection.</td>
<td></td>
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<tr>
<td></td>
<td><strong>Enforcement, reporting, sanctioning and following-up</strong></td>
<td></td>
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<tr>
<td>3.</td>
<td>Institute systems to ensure consistent enforcement of environmental control systems by carrying out routine, timely and prompt inspections and enforcement activities rather than depending on working on ad-hoc based on reported incidents</td>
<td>Use the already in place EIA data base</td>
<td>Develop criteria and indicators for risk based inspections</td>
<td>July 2016</td>
</tr>
<tr>
<td>4.</td>
<td>Establish inspection performance information system of which most of its data will be sourced from NEMC petroleum environmental database (Central Environmental</td>
<td>Integrate inspection performance information system within the current EIA data base</td>
<td></td>
<td>December 2017</td>
</tr>
<tr>
<td>No.</td>
<td>Recommendation</td>
<td>NEMC’s Comment(s)</td>
<td>Action(s) to be taken</td>
<td>Timeline</td>
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<tr>
<td>5.</td>
<td>Establish standard inspection/auditing template which can be used nationwide tailored for auditing the petroleum sector</td>
<td>Already inspection form in place which can be used</td>
<td>Effectively use the developed inspection forms</td>
<td>July 2016</td>
</tr>
<tr>
<td>6.</td>
<td>Ensure that the sanctions imposed reflect the cost of actual destructions and restoration rather than just estimation of the destruction made by the defaulters</td>
<td>Tools already in place for environmental compliance and enforcement: Guidelines for environmental monitoring and inspections; Site specific procedure for environmental inspection; National environment investigation manual</td>
<td>Tailor made the existing tools to cater for petroleum resources</td>
<td>July 2016 to June 2017</td>
</tr>
<tr>
<td>7.</td>
<td>Make sure that information from MEM and TPDC regarding non-compliance of environmental standards are received timely and acted upon accordingly</td>
<td>Already in place environmental sections within TPDC and MEM</td>
<td>Enhance coordination mechanism with TPDC and MEM and establish reporting systems</td>
<td>April 2016</td>
</tr>
<tr>
<td>8.</td>
<td>Initiate the review process of all outdated laws and regulations to enable effective enforcement of environmental standards in the petroleum sector</td>
<td>Require different stakeholders. TBS to initiate</td>
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<tr>
<td>9.</td>
<td>Ensure that Directorate of Environmental Impact Assessment (DEIA) establishes a</td>
<td>Ongoing Refer No. 1</td>
<td>Directorate of Environmental Compliance and Enforcement to effectively make</td>
<td>Already started</td>
</tr>
<tr>
<td>No.</td>
<td>Recommendation</td>
<td>NEMC’s Comment(s)</td>
<td>Action(s) to be taken</td>
<td>Timeline</td>
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<tr>
<td></td>
<td>data base system which will be updating the Directorate of Environmental Compliance and Enforcement (DECE) with the information about petroleum exploration companies that have undertaken EIA or EA or exploration companies without EIA certificate</td>
<td></td>
<td>use of the current EIA data base</td>
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<tr>
<td></td>
<td>Monitoring and evaluation of enforcement activities</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10.</td>
<td>It establishes and approves monitoring and evaluation indicators for enforcement of environmental control systems in the petroleum sector, periodic monitoring and evaluation of enforcement activities is done accordingly and the results are used as the basis for further improvements</td>
<td>This will be operationalized after finalizing comprehensive EIA database in No. 1 and having in place Nos 2 - 5 Use Sector environmental sections</td>
<td>Establish criteria and indicators Improved reporting and feedback systems at all levels</td>
<td>July 2016 to June 2017</td>
</tr>
<tr>
<td>11.</td>
<td>All reports resulting from environmental enforcement activities from zonal offices, LGAs or other sector ministries as received are properly scrutinized to determine deficiency and provide feedback</td>
<td>Use Sector environmental sections</td>
<td>Improved reporting and feedback systems at all levels</td>
<td>2018</td>
</tr>
</tbody>
</table>
Appendix 3: Audit Questions, Sub Questions and Audit Criteria used during the Audit

The audit objective was addressed through the following four audit questions:

<table>
<thead>
<tr>
<th>Audit Question 1</th>
<th>: Have the VPO-DoE and NEMC developed effective plans for compliance monitoring of regulated entities?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-question 1.1</td>
<td>: Has the VPO-DoE developed an overall compliance monitoring “regime” that clarifies the respective roles and responsibilities of all relevant agencies (VPO-DoE, NEMC, VPO, MEM, TPDC)?</td>
</tr>
<tr>
<td>Sub-question 1.2</td>
<td>: Does NEMC maintain a list / database of regulated entities and their applicable compliance requirements?</td>
</tr>
<tr>
<td>Sub-question 1.3</td>
<td>: Has NEMC determined the information reporting requirements for regulated entities?</td>
</tr>
<tr>
<td>Sub-question 1.4</td>
<td>: Has NEMC developed a risk-based inspection schedule for regulated entities?</td>
</tr>
<tr>
<td>Sub-question 1.5</td>
<td>: Has NEMC determined the human and financial resources, as well as the tools and equipment, it needs to carry out compliance monitoring?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audit Question 2</th>
<th>: Do VPO-DoE, NEMC, MEM and TPDC implement their respective compliance monitoring activities as planned?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-question 2.1</td>
<td>: Does the Ministry of environment oversee implementation of the compliance monitoring regime?</td>
</tr>
<tr>
<td>Sub-question 2.2</td>
<td>: Have inspections been carried out as planned?</td>
</tr>
<tr>
<td>Sub-question 2.3</td>
<td>: Has information required from regulated entities been received and evaluated?</td>
</tr>
<tr>
<td>Sub-question 2.4</td>
<td>: Does NEMC routinely assess the overall compliance status of each regulated entity?</td>
</tr>
<tr>
<td>Sub-question 2.5</td>
<td>: Does NEMC have adequate processes in place to trigger enforcement actions in case of non-compliance?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audit Question 3</th>
<th>: Does NEMC plans for enforcement?</th>
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<tbody>
<tr>
<td>Sub-question 3.1</td>
<td>: Does NEMC has a procedural mechanism of conduction enforcement?</td>
</tr>
<tr>
<td>Sub-question 3.2</td>
<td>: Does NEMC enforcement roles clearly defined?</td>
</tr>
<tr>
<td>Audit-question 4</td>
<td>: Does NEMC implement enforcement plans/requirements effectively?</td>
</tr>
<tr>
<td>Sub-question 4.1</td>
<td>What kind of sanctions does NEMC impose in case of non-compliance?</td>
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<tr>
<td>Sub-question 4.2</td>
<td>Do the imposed sanctions reflect the actual destructions made by the violators?</td>
</tr>
<tr>
<td>Sub-question 4.3</td>
<td>Does NEMC make follow-up on the sanctions imposed?</td>
</tr>
</tbody>
</table>
Appendix 4: Detailed Methodology approach of the Audit

The main elements of our fieldwork, which took place between September, 2015 and January 2016, were

Officials Interviewed
Officials from Vice President office - Directorate of environment, National Environment Management Council (NEMC), Ministry of Energy and Minerals (MEM) - Environmental Management Unit (EMU) and Tanzania Petroleum Development Corporation (TPDC). These officials were interviewed in order to obtain overall knowledge on environmental enforcement plans in mitigating environmental impacts caused by petroleum exploration activities. Specific information was to be gathered on inspections; reporting; sanctions; follow up on environment control systems in the petroleum exploration activities; coordination with other sector ministries, agencies, departments and other government institutions; in environment conservation issues and assess whether VPO monitors the performance of NEMC and also how NEMC monitors its performance of enforcement to ensure compliance with environmental conditions on petroleum activities.

Observation
The team visited Mtwara, Lindi and Kigoma regions. The visit at Mtwara region was aimed at observing the level of compliance with environmental requirement at following sites: Supply Base Solution (SBS) Waste Management Facility, Madimba gas processing Plant and Mnazi Bay Exploration sites. The aim was to assess how NEMC through its Zonal office work with Local government authorities in order to achieve intended goals.

Moreover, Lindi and Kigoma regions were also visited in order to observe and assess the level of awareness of local government authorities on ongoing explorations activities in their areas. Also to establish enforcement activities which are carried out in the petroleum exploration operations within their areas of jurisdiction. Visits were also meant to establish whether there is a working relation between LGAs and NEMC on compliance and enforcement activities.

Document Review
Review of documents from VPO, NEMC, MEM, TPDC and LGAs were for five (5) financial years (2010/11-2014/15). The reviewed documents were used to verify information obtained through interviews and observations in the field.
The table below provides details of each of the methods used for data collection during the audit.

**Selected methods and their purposes**

<table>
<thead>
<tr>
<th>Selected method</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td><strong>1. Interviews</strong></td>
<td><strong>Vice President’s Office</strong></td>
</tr>
<tr>
<td>Director of Environment</td>
<td>He is responsible for top decisions on matters related to implementation of National Environmental Policy, EMA and its Regulation, 2004</td>
</tr>
<tr>
<td>Principal Environmental Research Officer</td>
<td>He was the head of Environmental Impact Assessment Section responsible for preparing and reviewing of environmental management policies, legislatives, regulations, guidelines, criteria and procedures for environmental impact assessments, risk assessments and Strategic Environmental Assessments.</td>
</tr>
<tr>
<td><strong>National Environment Management Council</strong></td>
<td><strong>Ag. Director of Environmental Compliance and Enforcement (DECE)</strong></td>
</tr>
<tr>
<td>She is responsible for environmental compliance and enforcement matters. The team wanted to know enforcement plan, procedural mechanism of conducting enforcement.</td>
<td></td>
</tr>
<tr>
<td><strong>Director of Environmental Impact Assessment (EIA)</strong></td>
<td>The team wanted to know how the EIA Directorate implement its responsibilities of reviewing Environmental Impact Assessment Reports</td>
</tr>
<tr>
<td><strong>Principal Environmental Management Officer</strong></td>
<td>To get information whether NEMC has developed a risk-based inspection schedule for regulated entities.</td>
</tr>
<tr>
<td><strong>Senior Environmental Management Officer</strong></td>
<td>To know whether NEMC has adequate processes in place to trigger enforcement actions in case of non-compliance.</td>
</tr>
<tr>
<td><strong>Environmental Management Officers</strong></td>
<td>The team wanted to know if they conducted and make follow up on enforcement issues</td>
</tr>
<tr>
<td><strong>Head of Environmental Research and Coordination (ERC)</strong></td>
<td>The team wanted to know if they researched and coordinated environmental impact issues relating to petroleum explorations activities</td>
</tr>
<tr>
<td><strong>Energy Sector Capacity Building Program (ESCBP) Coordinator</strong></td>
<td>The team wanted to know if the capacity building program has identified needs assessment in terms of human, tools and financial resources to enable environmental sustainability in the petroleum sector</td>
</tr>
<tr>
<td><strong>Senior Legal Officer</strong></td>
<td>The team wanted to know involvement of the legal unit in the enforcement issues</td>
</tr>
<tr>
<td>Legal officer</td>
<td>The team wanted to get information on sanctions imposed and follow-ups made in case of non compliance.</td>
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<tr>
<td><strong>NEMC - Mtwara Zone</strong></td>
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<tr>
<td><strong>Zonal Director</strong></td>
<td>The team wanted to know whether the Zone implement enforcement plans and make follow ups on environmental requirement of exploration projects available in the area of its jurisdiction. Also the extent of coordination with other key stakeholders in addressing environmental matters related to petroleum exploration activities.</td>
</tr>
<tr>
<td><strong>Environmental Officer</strong></td>
<td>To know extent of execution of monitoring compliance and enforcement of environmental standards in the petroleum projects available in Mtwara.</td>
</tr>
<tr>
<td><strong>Ministry of Energy and Minerals</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Principal Environmental Officer</strong></td>
<td>The team wanted to know how the environmental management unit monitor and coordinate with NEMC in petroleum companies comply with environmental requirements.</td>
</tr>
<tr>
<td><strong>Tanzania Petroleum Development Corporation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Safety and Environmental Officer</strong></td>
<td>The team wanted to know how TPDC make sure that the contractors (petroleum companies) comply with environmental regulations as agreed in the Production Sharing Agreement.</td>
</tr>
<tr>
<td><strong>Local Government Authorities</strong></td>
<td></td>
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<tr>
<td><strong>Mtwara Regional Commissioner’s Office</strong></td>
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</tr>
<tr>
<td><strong>Assistant Regional Administrative Secretary</strong></td>
<td>To get a general overview of the ongoing petroleum explorations activities in Mtwara Region</td>
</tr>
<tr>
<td><strong>Regional Environmental Management Officer</strong></td>
<td>To assess the concern of Regional Commissioner’s office in the environmental matters relating to petroleum explorations and how it coordinate with NEMC and other key stakeholders.</td>
</tr>
<tr>
<td><strong>Mtwara District Council</strong></td>
<td></td>
</tr>
<tr>
<td><strong>District Executive Director</strong></td>
<td>To assess extent of coordination of environmental matters specifically in the petroleum sector between NEMC, Mtwara District Council and other key stakeholders.</td>
</tr>
<tr>
<td><strong>Mtwara Municipality</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Environment and Health</strong></td>
<td>To obtain information on how the</td>
</tr>
</tbody>
</table>
Mtwar\a Municipal Council is aware and concerned on a waste disposal facility owned by a Supply Base Solution (SBS) Company located at Mikindani area.

<table>
<thead>
<tr>
<th>Officer</th>
<th>District Environmental Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lindi - Kilwa District Council</td>
<td>To check the involvement of the council in planning, inspecting, follow up and coordinating environmental matters with NEMC and other key stakeholders.</td>
</tr>
<tr>
<td>Kigoma</td>
<td>The audit wanted to know extent of awareness and preparedness of the Council in ensuring petroleum companies comply with environmental regulations.</td>
</tr>
<tr>
<td>Ujiji Municipal Council Environmental Officers</td>
<td>To assess awareness and extent of coordination between Uvinza District Council and NEMC on environmental risk factors relating to petroleum explorations activities along Lake Tanganyika Basin.</td>
</tr>
<tr>
<td>Uvinza District Executive Director</td>
<td>The Marine consultant was interviewed in order to get a general overview of explorations activities procedures and how exploration companies ensure compliance with environmental standards during explorations.</td>
</tr>
</tbody>
</table>

2. Observation
Visits to Mtwara, Lindi and Kigoma regions by considering location of explorations sites, waste disposal facility and coordination activities by LGAs

To gather primary data on the level of compliance and enforcement matters

To gather information on issues related to monitoring compliance, enforcement and coordination with other stakeholders in planning, implementation and follow up on enforcement activities.

3. Document Review
Review of documents from VPO, NEMC, MEM, TPDC and LGAs were for five (5) financial years (2010/11-2014/15); The reviewed documents included;

Guidelines for Environmental monitoring tools - Second draft of year 2008

They were reviewed in order to ascertain how many Petroleum explorations companies complied with the requirement of filling EIA reports to NEMC before starting operations.

It was reviewed to assess whether it has address and identify environmental monitoring tools specifically for petroleum

Guidelines for Environmental monitoring tools - Second draft of year 2008

It was reviewed to assess whether it has address and identify environmental monitoring tools specifically for petroleum
<table>
<thead>
<tr>
<th>Document</th>
<th>Purpose and Description</th>
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</thead>
<tbody>
<tr>
<td>Site Specific Inspection - Zero draft of July 2008. (Procedures for Environmental Officers National Environmental Investigation Manual)</td>
<td>It was reviewed to check whether the inspection procedures identified covered upstream petroleum exploration projects.</td>
</tr>
<tr>
<td>Generic Waste Disposal Guidelines final of February, 2015</td>
<td>The guideline was reviewed in order to assess whether it has identify procedural mechanisms of waste disposal resulting from exploration activities.</td>
</tr>
<tr>
<td>NEMC Strategic plan 2010-2014</td>
<td>To check whether petroleum exploration activities had been identified and included in the strategic plan.</td>
</tr>
<tr>
<td>VPO Strategic plan 2010-2014</td>
<td>To check and analyze to what extent environmental matters specifically in the upstream petroleum explorations had been taken on board during planning phase.</td>
</tr>
<tr>
<td>NEMC’S National Environment Investigation manual 2012</td>
<td>It was reviewed to assess whether the Environmental investigation procedures were also identified and covered petroleum sector.</td>
</tr>
<tr>
<td>NEMC annual Work Plan and Budget (Financial year 2010/2011, 2011/2012, 2012/13, and 2014/15).</td>
<td>These documents were reviewed to ascertain whether the work plan and budget for the period under review covered environmental activities in the upstream petroleum explorations.</td>
</tr>
</tbody>
</table>
Appendix 5: List of oil and/or gas exploration companies operating in Tanzania

<table>
<thead>
<tr>
<th>S/N</th>
<th>Company name</th>
<th>Country of Origin</th>
<th>Area/Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Antrim Resources</td>
<td>Canada</td>
<td>Zanzibar/Pemba</td>
</tr>
<tr>
<td>2</td>
<td>Artumas Group</td>
<td>Canada</td>
<td>Mnazi Bay</td>
</tr>
<tr>
<td>3</td>
<td>Dominion Oil &amp; Gas</td>
<td>UK</td>
<td>Mandawa, Kisangire, Selous &amp; Deep Sea Block#7</td>
</tr>
<tr>
<td>4</td>
<td>Dodsal Resources</td>
<td>UAE</td>
<td>Ruvu Block</td>
</tr>
<tr>
<td>5</td>
<td>KEY PETROLEUM</td>
<td>Australia</td>
<td>West SongoSongo</td>
</tr>
<tr>
<td>6</td>
<td>Mauriel ET Prom</td>
<td>France</td>
<td>Bigwa &amp; Mafia Channel</td>
</tr>
<tr>
<td>7</td>
<td>Ndovu Resources/Tullow Oil</td>
<td>Australia</td>
<td>Nyuni, Ruvuma</td>
</tr>
<tr>
<td>8</td>
<td>Ophir Energy</td>
<td>Australia</td>
<td>Deep Sea Block#1,3, &amp; 4</td>
</tr>
<tr>
<td>9</td>
<td>Pan African Energy</td>
<td>UK</td>
<td>SongoSongo</td>
</tr>
<tr>
<td>10</td>
<td>Petrobras</td>
<td>Brazil</td>
<td>Deep Sea Blocks#5, 6 &amp;</td>
</tr>
<tr>
<td>11</td>
<td>Petrodel Resources/Heritage</td>
<td>UK</td>
<td>Tanga, Kimbiji &amp; Latham</td>
</tr>
<tr>
<td>12</td>
<td>RAK-GAS Company</td>
<td>UAE</td>
<td>East Pande</td>
</tr>
<tr>
<td>13</td>
<td>SHELL International</td>
<td>Holland</td>
<td>Deep Sea Blocks#9,10,11, &amp; 12</td>
</tr>
<tr>
<td>14</td>
<td>STATOILHYDRO ASA</td>
<td>Norway</td>
<td>Deep Sea Block#2</td>
</tr>
<tr>
<td>15</td>
<td>HYDROTANZ</td>
<td>UK</td>
<td>North Mnazi Bay</td>
</tr>
<tr>
<td>16</td>
<td>TULLOW OIL</td>
<td>UK</td>
<td>North Lake Tanganyika</td>
</tr>
<tr>
<td>17</td>
<td>BEACH PETROLEUM</td>
<td>AUSTRALIA</td>
<td>South Lake Tanganyika</td>
</tr>
</tbody>
</table>