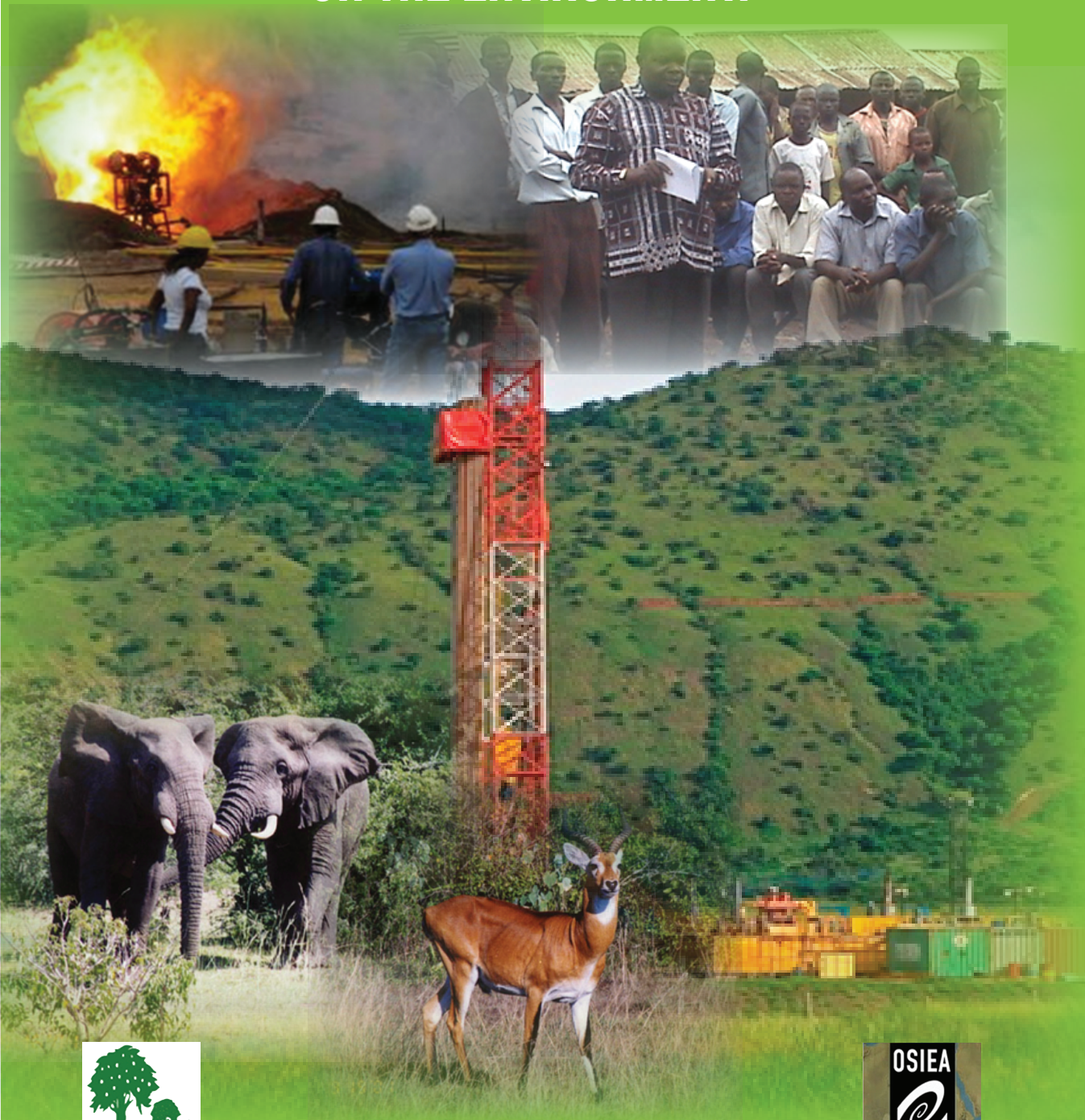


A COMMUNITY BASED GUIDE FOR MONITORING IMPACTS OF OIL AND GAS ACTIVITIES ON THE ENVIRONMENT.



**A COMMUNITY BASED GUIDE
FOR
MONITORING
IMPACTS OF OIL AND GAS ACTIVITIES
ON THE
ENVIRONMENT.**

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ACRONYMS AND ABBREVIATIONS

DEO	District Environment Officer
EIA	Environment Impact Assessment
NEA	National Environment Act
NEMA	National Environment Management Authority
NPA	National Planning Authority
OSIEA	Open Society Initiative for Eastern Africa
PAS	Production Sharing Agreement
UIA	Uganda Investment Authority
UWA	Uganda Wildlife Authority

Acknowledgement

We wish to acknowledge with thanks, our various partners who have assisted us in various ways. Specifically, we would like to thank the Open Society Initiative for Eastern Africa (OSIEA) for providing the financial resources that have enabled the publication of this guide possible.

The authors of this publication acknowledge the invaluable contribution of the team that edited and reviewed this work and the community members who were consulted and provided in-put into the document.

The authors take full responsibility for any errors or omissions in this publication.

Foreword

In 1992, Uganda was among the 187 countries that attended the Earth Summit in Rio- de Janeiro in Brazil. The purpose of the summit was to address eminent danger of environment. At that summit, the world leaders adopted Agenda 21 which is a plan of action to which states must adapt in order to have development that is sustainable.

Sustainable development was defined as "development that meets the demands of the current generations without compromising those of future generations."

One of the principles of Rio is Principle 10 which states,

"Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided."

The discovery of oil in the Albertine region is both sweet and bitter. It provides enormous opportunity for a developing country like Uganda to access foreign currencies that would in turn drive and accelerate development. The anticipated revenue from oil would be able to turn around the country in terms of infrastructural development and provision of social and public services including schools, hospitals, roads among others.

It will help communities raise income and productivity through a multiplier effect by opening and creating market for their produce, providing jobs and availing affordable social services like education and health. It is expected that individual citizens' livelihoods will also be improved.

On the other hand however, the prospecting, drilling, refining and transportation of oil is likely to take great toll on environment more so it is taking place in the Albertine region; a region that is highly ecologically sensitive for vertebrates and invertebrates and has been described as one of the most bio-diverse areas on the African continent.

Oil is being drilled inside Protected Areas along the region which is of great concern. The challenge therefore to government, citizens, developers and communities is to balance this to ensure that we benefit from the oil with minimal negative impact on the environment.

As Principle 10 clearly puts it, this can be done best with the involvement of people concerned, the communities.

The purpose of this guide therefore, is a contribution to that noble goal through public participation. It is intended to guide individual citizens, groups and communities to help monitor the environment and developments therein, to be the eyes and ears of government to forge a cordial and friendly relationship with the developers so that in the end, the desired goal is achieved.

Every tool or guide has its strengths and limitations. This guide is not an exception; it does not contain all answers to questions that may be asked, but is intended to compliment to the already existing structures, methods and tools.

Special thanks are extended to the authors of this guide and to the Open Society Initiative for East Africa for the financial support to make this publication possible.

Finally, we believe that if we all in our individual capacities did little, then cumulatively, we would do much.



Kenneth Kakuru,

Director, 2011.

KEY TERMS AND DEFINITIONS.

The following terms and definitions are described in the context in which they are used in this guide.

Access road- means a road giving access only to the properties to it. In this case, the access road refers to the road that is used to get to the area where oil is being drilled (oil drilling site).

Accessing information- Is the act of searching & obtaining information.

Albertine rift region- is the Northern most part of the Western arm of the Great East African Rift system and covers an area of 33,000km² stretching 500km long and 45km wide. It is one of the regions with the highest number of species on the African continent.

Aquifers- are underground layers of rock or soil that contain water.

Bio-remediation- is the use of biological agents, such as bacteria, fungi, or green plants, to remove or neutralize poisonous matter, as in polluted soil or water.

Combustion process- this is the process of burning. The development of light and heat from chemical substances during the oil drilling process.

Communication strategies - refers to the ways and means through which messages are sent and received.

Compensation - Is the act of awarding a person or group of people benefits as a result of a loss or suffering.

Contamination- Is the act of making impure or bad anything by mixing in or with impure, dirty or poisonous matter.

Dialogue- refers to communication or a discussion among people with different points of view on issues of common concern.

Developer- refers to a person or group of persons, company, agency or firm undertaking a new project or proposing to extend an existing project which is subject to the EIA process.

Development-refers to the process of bringing out the economic possibility of a resource or something.

Drilling- means to make a hole in the earth surface in order to get the oil out of the ground.

Drilling pad- is the area where the drilling of oil is carried out; it is where the drill string begins its trip into the earth.

Drilling string- refers to a collection of pipes fixed firmly together.

Effluent - refers to liquid waste that may be harmful to humans or the environment.

Environment -means the physical factors of the surrounding of human beings including land, water, atmosphere, sound, smell, taste, plants, and animals.

Environment Impact Assessment- is a process of analyzing the positive and negative effects of a proposed project, plan, or activity on the environment. This may include studies on the weather. Plants, animal, soil, human health, including physical, social, biological, economic and cultural impacts. It is one of those measures taken to ensure that development is sustainable.

Environmental Monitoring: Is the continuous assessment and observation of the potential effects of any activity on the environment.

Explore - simply means to examine carefully.

Exploration drilling- is a procedure in which several test holes are drilled for the purpose of evaluating the contents of the ground in a particular area.

Flaring- is the burning with a bright flame for a short time during oil exploration activities.

Geologists- refers to people who study the formation of the earth and how it has changed over time.

Good governance- means the process of decision making that is participatory, transparent and ensures that the decisions are implemented.

Immiscible gases - are those gases that cannot mix with each other.

Impact -refers to the adverse or beneficial effect of any action on one or more elements of the natural, social and economic environment.

Influx- means an increase in the number of people coming into an area at a given time.

Information dissemination- is the act of communicating or giving out information.

Injection - refers to an act during which gases or water are forcefully inserted into something.

Lead Agency refers to any Ministry, institution or Local Government system in whom any law vests functions of control or management for a specific sector of the environment.

Licensing- refers to the official permission for an activity to take place.

Miscible gases- refers to those gases that mix or blend with each other.

Mitigation- means the act of reducing or minimizing impacts to the environment.

Ordinary member of the community: refers to someone who has had some formal education of at least up to secondary level, e.g. a teacher, nurse, a youth church leader, etc.

Pollutants -refer to substances that make air, soil, water e.t.c. dangerously unfit for use by plants, animals and humans.

Predator- refers to an animal that kills and eats others for its survival.

Project- means a planned undertaking or activity.

Project brief is a summary statement of the likely environmental effects of a proposed development.

Public participation- refers to an open, accountable process through which individuals and groups within selected communities can exchange views and influence decision-making.

Right- means to have a moral or lawful claim on something.

Seismic study- is a study during which information and data is collected about an area and what geological features make up the site to be explored.

Sustainable development - refers to the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

According to the Oxford dictionary, a guide is a book of elementary instructions or information. Simply put, it only directs you where to go and what to do. It should contain enough information as its own to satisfy the needs of the user.



This is a guide to help you monitor the likely impacts of oil and gas activities on the environment in your community.

1.0 INTRODUCTION

This guide is a hands-on tool to assist you in having more influence on what is happening in your community, your district and in Uganda. It is intended for use by local communities in playing their role in environmental management.

Particularly, the guide seeks to equip local communities with the knowledge on oil and gas that will enable them to effectively participate, monitor and manage the likely impacts of oil and gas development activities on the environment.

1.1 PURPOSE AND SCOPE

This is a user friendly guide which is intended to be used by local communities and community based organizations while playing their role in environmental management through monitoring oil and gas development activities and their likely impacts on the environment.

It is based on the principle that local communities have a right to participate in making decisions on matters that may have significant effect on them and the environment in which they live.

The guide provides an overview of oil and gas exploration activities and the impact of these activities on the environment. It also provides information about the major players in the oil and gas exploration industry, environmental issues in the oil and gas exploration and production and the best way of monitoring and managing such impacts.

In order to participate effectively, the community must have some knowledge about the subject matter. In this regard, this guide is also a source of information to enable communities participate in oil and gas debates.

1.2 Brief Background on Oil and Gas in Uganda.

Oil was discovered in Uganda during the colonial times but was left in the soil in favour of agriculture. Preliminary exploration started in 1920-1945 during which time oil leakages were reported. Some shallow wells were drilled by an Anglo-European Company from South Africa in the areas of Kibiro and Kibuku based on oil leakage observations.

However, the process stagnated in the period 1945-1980 as a result of World War II and later due to political uncertainties in the country.

It was recently re-discovered in 2006 by Hardman Resources and officially announced that Uganda would start the oil and natural gas exploration process. Uganda is set to start producing oil for commercial purposes; this means that the oil discovered in the Albertine region in the Western part of Uganda is going to be removed and turned into a product that can be sold so that the country can get revenue out of it.

The government has put in place measures to ensure that the oil resource is managed sustainably. For example: in 1985, the Petroleum Act was enacted followed by the formation of the Petroleum Exploration and Production Department (PEPD) in 1991 and then the National Oil and Gas Policy in 2008 among other initiatives. To date, sixty two (62) exploration and appraisal wells have been drilled; of which 58 were successful and 20 oil and gas discoveries made. However, less than 40% of the whole Albertine Graben has been evaluated.

A Community Based Guide for Monitoring Impacts of oil and gas activities on the environment.

It has been noted that the people in the community where oil and natural gas has been discovered have very little if at all, or no information about oil and natural gas as well as the oil and natural gas exploration activities and how these activities can affect their community and their environment.

What is a local Community?

This is a group of people who live together in the same area and are united with the same interests.



A fishing community in Kyehoro village near Lake Albert : Photo courtesy Greenwatch.

THE RIGHT TO A CLEAN AND HEALTHY ENVIRONMENT

You have a right to:

- access information from government bodies (Article 41 of the Constitution of Uganda);
- participate in decisions of projects that may affect your environment (e.g. public hearings);
- a clean and healthy environment (Article 39 of the Constitution of Uganda);
- access justice in courts of law or any appropriate medium as the case may

What is a right?

The word right means to have a morally just or lawful claim on something.

require.

The laws of Uganda provide that every person has a right to a clean and healthy environment. Article 39 of the Constitution of Uganda provides that every Ugandan has a right to a clean and healthy environment.

This right also comes with a duty for every individual to manage the environment in which they live.

As a citizen of Uganda, you have a right or claim for a clean and healthy environment. Therefore it would not be right for any person to do something that would make your environment unclean and unhealthy.

Every right has a corresponding duty.

You have a duty to maintain and enhance the environment in which you live. This is why it is important for you as a member of your community to participate in the monitoring and management of the environment; by doing this you will be enforcing your right to protect the environment.

Under the EIA (Environment Impact Assessment) Regulations, every citizen has a duty to monitor any project to ensure compliance and report non-compliance to your local environment committee or designated institution.

What is the environment?

The environment means the physical factors of the surrounding of human beings including land, water, atmosphere, sound, smell, taste, plants, and animals.

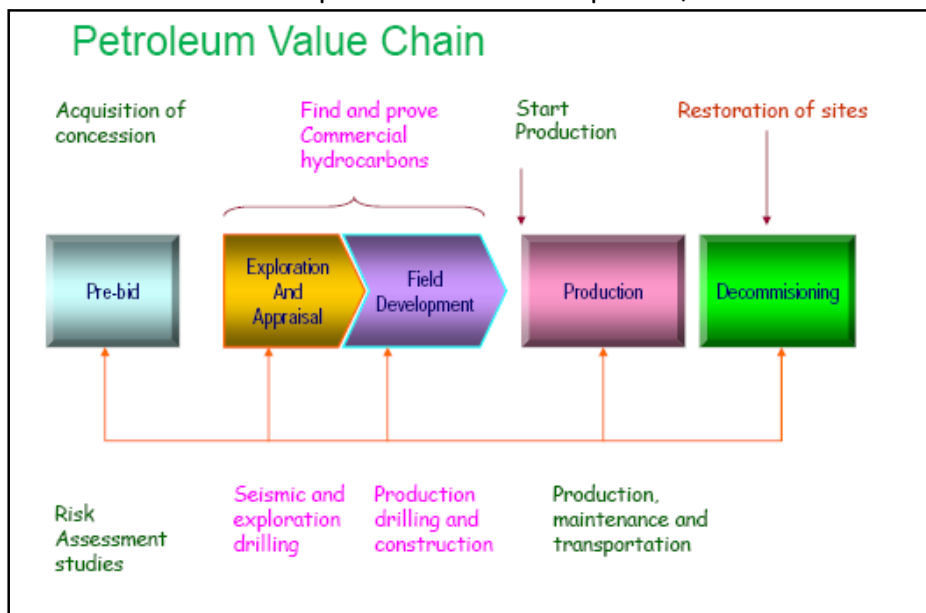
2.0 SECTION ONE

The Petroleum Production Value Chain

The Petroleum Value Chain consists of 2 main processes namely:

- i) the **Upstream** process involving the licensing process (when companies bid or propose and acquire concessions and licenses to operate), the exploration, development, production and decommissioning processes and;
- ii) the **Down stream** process which involves transportation, refining, gas processing, distribution, sales and marketing processes.

Source: Petroleum Exploration and Production Department, 2011.



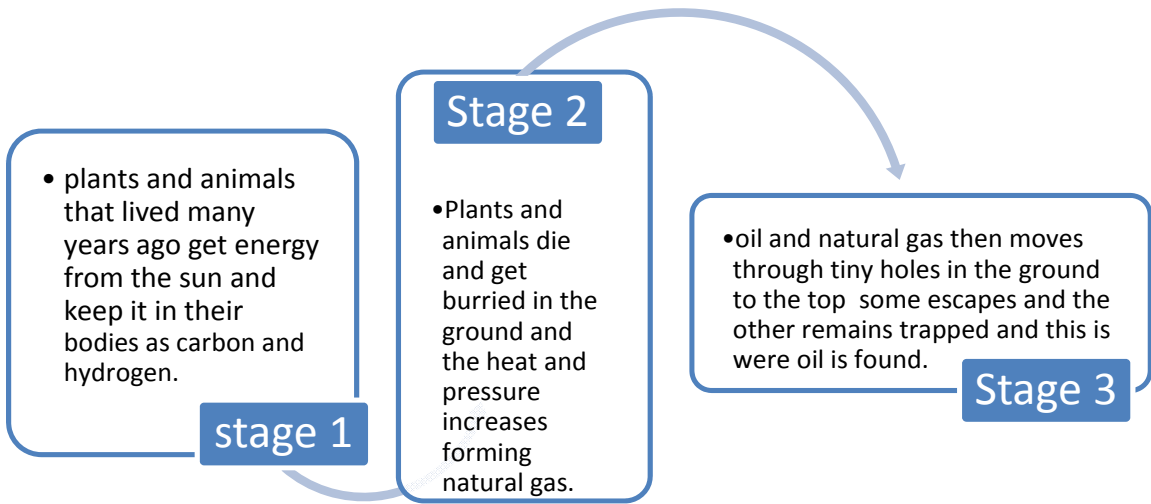
AN OVERVIEW OF OIL AND GAS EXPLORATION PROCESS

How is Oil and Gas formed?

Oil and gas can be formed at the bottom of the big water bodies like oceans and seas or it can be formed underneath the ground on land.

The type of oil and gas that was formed in Uganda is underneath the ground on land not under water.

Oil and gas are formed in three (3) stages:-



STAGE 1

Oil and gas begins as very small plants and animals that lived million of years ago.

As these very small plants and animals lived, they got energy from the sun which energy was kept as hydrogen and carbon in their bodies.

When they die over time the remains get buried by sand, mud and other factors. Over many years layer after layer of soil and other plants and bacteria are formed.

STAGE 2

As the plants and animals became buried even deeper, heat and pressure begins to rise. The amount of pressure and the degree of heat decide if the material will become oil and gas.

More heat produces light oil. Even more heat made mostly of plants material produces natural gas.

STAGE 3

After oil and gas are formed, they tend to move through tiny holes in the surrounding rock. Some oil and natural gas move all the way to the top while other natural oil and gas deposits move until they are caught under the solid layers of

rock or clay where they are trapped. These trapped deposits are where we find oil and natural gas today.

How is Oil and Gas found?

People, who study the formation of the earth and how it has changed over time, are called **Geologists**.

These geologists and oil engineers collect clues as to what is deep under the earth's surface. Higher technology has changed the finding of oil and natural gas, and helps them identify likely reserves with greatly improved accuracy.

Engineers can gather above-ground clues using airplanes and satellites to map the surface, identify promising geological formations, and look for oil and natural gas.

But engineers get a lot of useful information by looking at physical structures and rock properties under the earth.

They use a number of strategies such as:

a) Drilling

Drilling for oil and natural gas is a complex process, but higher technology has made the job much better organized and productive while producing less impact on the environment.

Is Oil the same every where?

Different regions on earth have different types of oil, so oil is often classified basing on where it comes from e.g. the oil that has been discovered in the Albertine region is thick and waxy.

Some oil reserves have very heavy oil, and others are just heavy while others are light.

A drilling derrick is used to drill oil. It is used to position and support the drill string. A drill string is made up of pipes fixed firmly together. A drilling rig is also used to drill oil. The drill rig runs on electricity.

The drilling process involves the use of a drill bit which cuts the surface to crush the rock into very small particles.



Oil drilling at Ngasa on the shores of Lake Albert, Uganda Source: www.weinformers.net

A drill and the drill bit cut through the rock in order to remove the soil and create a hole in the earth. The drilling mud is then added to the hole. This mud helps cool the drill bit which is heated because of cutting through the rock.

The weight of the drilling mud keeps the hole open. Casing made of steel are lowered into the hole and cemented into place to keep the hole open so that oil and natural gas can be brought to the surface.

b) Seismic Surveys

Seismic surveys are done by sending high frequency energy sound waves into the ground and measuring how long they take to reflect back to the surface. Since sound travels at different speeds as it passes through different materials, computers can use the seismic information to create a clear map of what lies below the surface.

Geologists use these clear seismic images to look for accumulation of oil and natural gas. Engineers then use the information to plan the safest, cheapest way to get to the oil and natural gas tank.

Once a tank has been found and put into production, a chain of clear seismic surveys can be taken over time to see if all the oil and natural gas tanks are used up well. If not, more wells can be dug to produce more tanks.

How is oil and Natural gas got from the ground?

Getting oil and gas from the ground is not as simple as one would think; there are a number of factors underneath the surface that make it very difficult to get the oil and natural gas from the ground. Today, modern technology enables oil and natural gas to be got from the ground in three ways:

1. Primary Recovery

This uses an oil tank's own pressure that is underneath the ground to bring the oil to the surface. When the oil tank's own pressure fails to bring the oil to the surface simple pumps are used to help bring more oil to the surface.

2. Secondary Recovery

This involves injecting water or natural gas to bring more oil to the surface and maintain the oil tank's pressure.

3. Enhanced Recovery

This involves more complicated methods to get oil from the ground. There are two common ways this method can be used: thermal recovery or gas injection.

- (a) **Thermal recovery** involves injecting steam into the ground. The heat from the steam makes the oil flow more, and the increased pressure forces it to the surface.
- (b) **Gas injection** uses either miscible or immiscible gasses. Miscible gases dissolve carbon-dioxide, propane, methane or other gases in the oil to lower its thickness and increase the flow. Immiscible gasses do not mix with the oil, but increase pressure in the oil tank to force additional oil to the surface.

Exploration drilling

Exploration drilling is a procedure in which several test holes are drilled for the purpose of evaluating the contents of the ground in a particular area.

The companies that have been licensed to carry out oil and gas exploration will begin by discovering the perfect area to drill; this is what is known as **exploration drilling**.

To explore simply means to examine carefully. To drill in this case means to make a hole in the earth surface in order to get the oil out of the ground.

The purpose of exploratory drilling is to find out whether:

- 1) oil of value is present or not, and to assess the quality of the oil.
- 2) the site can produce enough oil and gas to make it economically practical to proceed with further development.

There are a number of steps in a drilling program. These include:-

- selecting the site for drilling;
- preparing the site for drilling;
- drilling the well; and
- analysing data obtained during drilling.

Selecting the site for drilling

Companies will select a drilling site that allows them to easily (and cheaply) access the target geological formations. Surface conditions may affect where drilling can occur. Wells are usually drilled where there is a fairly level ground surface of sufficient size (several acres, typically) to accommodate the drilling rig, reserve pits, and storage space for the materials and equipment used during the drilling program.

The process of selecting the drill site can be an important issue for landowners. Landowners may not want to hear or see the drilling operations, or live with the noise or pollution associated with the heavy equipment.

Also, the companys' preferred site may cause damage to important areas on the land such as crops or ecologically sensitive areas. Some types of formations allow for considerable flexibility in drill site location while others require more accuracy to hit the resources.

Preparing the Site for drilling

Preparing the site for drilling or well pad is when the most serious changes to the surface are likely to occur. There may be a number of private contractors (or subcontractors) on site during this period, and heavy equipment traffic tends to be intense during this phase of development.

The drilling process

To begin with, access roads have to be built. Therefore, one is likely to see bulldozers, road graders and gravel trucks in the early stages of drill site preparation. Once access is provided, the drill site will be cleared of vegetation and leveled. When this work has been completed, the drilling contractor will move in with all the equipment required for the drilling of the well.

Drilling the well

Drilling is the process during which the drilling rig is put up; then followed by putting in equipment to supply electricity, compressed air and water; and setting up storage facilities.



Above: A drilling rig

Drilling rigs operate a lift that raises and lowers the drill stem and bit. For shallow wells, the drill rig may be self-contained on a single truck. Deep-well rigs, however, may have to be brought to the site in several pieces and assembled at the site.

The rig is located and leveled over the main well hole, and all associated engines, pumps, and rotating and lifting equipment are connected or positioned close to the

rig. Water and fuel tanks are filled, and additives for drilling fluid are stored on location. The drilling contractor is then ready to begin drilling operations.

Analysing data during drilling.

During drilling, there are a number of questions the company attempts to answer, such as:

- the actual presence and quantity of oil and gas;
- how fast the oil and gas will flow;
- how the oil and gas bearing formations vary from place to place; and
- how much water is being found.

The questions above must be answered before substantial investment is made in full-scale production facilities. If the company determines that there is not enough oil or gas to call for production, all drilling equipment and materials should be removed from the drill site, and, depending on the regulations and laws, the company may be required to restore the site as nearly as possible to its original condition.

Also, the drill hole should be cemented and closed to prevent the contamination of groundwater and movement of fluids to the surface. In cultivated areas, the surface casing is often cut off below plow depth.

Major Players in the oil and Natural Gas exploration Process.

It is important to know who the major players in Uganda's oil and natural gas exploration are in order to know what their responsibilities are.

The major players in Uganda's oil and natural gas exploration include the following:

Some people believe that oil and natural gas exploration can be done anywhere. This is not true.

- **Central Government** is the authority that is responsible for the entire nation of Uganda.
- **The oil companies (the developer)**

Companies must secure permission from the owner of the land where the oil and natural gas has been discovered, whether the owner is a private citizen or the government.

In Uganda, natural resources like oil and gas are held by the government in trust for the people of Uganda. It is the government that allows oil and natural gas companies to compete to drill on the land.

The government and the oil exploration companies then sign an agreement known as a production sharing agreement. According to the signed agreement, the companies assume all the costs and risks of drilling the oil and in return pay the government a share of what they get from the oil exploration. The share of the production paid by the company to the government is called a **royalty payment**.

Some of the companies that have been licensed to carry out oil exploration in Uganda are Tullow Oil, Total, Dominion Petroleum Limited and the China National Offshore Oil Corporation (CNOOC). They are identified by the logos indicated below:



TULLOW OIL



TOTAL



CNOOC



Dominion Petroleum Limited

- **The District Local Government**

The District Local Government is made up of the district and sub county as a recognized administrative area.

The District Local Government is in charge of the social, political and economic development of the area and provision of social services. The Local Government includes the District Council, Municipal Council, Local council, Resident District Commissioner, District Land Board, and District Environment Officer.

There are also District Environment Committees. These are established by NEMA in consultation with the District Council and have several functions including:

- coordinating the activities of the district council relating to management of the environment and natural resources;
- ensuring that environmental concerns are integrated in all plans and projects approved by the District Council;
- promoting dissemination of information relating to management of the environment, assisting in the development; and
- formulation of bye-laws relating to management of the environment among other functions.

- **The Local Community**

They are the secondary beneficiaries of the oil and natural gas exploration activity.

- **National Environment Management Authority- NEMA**

NEMA is a body established by the National Environment Act and is under the general supervision of the Ministry of Water and Environment and is the main agency in Uganda charged with the management of the environment and coordinates, monitors and supervises all activities in the field of the environment.

- **Ministry of Water and Environment**

This Ministry is responsible for policy guidance and environmental management.

- **Uganda Revenue Management (URA)**

URA is a government body in charge of collecting taxes, accounting for the collected taxes in accordance with the law under which it was established.

- **Uganda Wildlife Authority(UWA)**

Is a government institution charged with conserving, economically developing and sustainably managing wildlife and Protected Areas(PAs) in Uganda in partnership with neighbouring communities for the benefit of the people of Uganda. Many of the Blocks which are being explored for oil and gas are found in Protected Areas.

- **National Planning Authority(NPA)**

Is the main institution responsible for coordination of national and decentralized development, planning and management process and production of national development plans for Uganda.

- **Various environmental related Non Government Organizations**

These work together with the local government and the local communities.

- **Land Owners**

These are the people on whose land the oil is found. Some of the wells where oil has been discovered in the Albertine region are situated on people's land, therefore land owners are important stakeholders.

3.0 SECTION TWO

MONITORING THE ENVIRONMENT

Monitoring is an important part of environmental management. It involves observing, measuring and recording of physical, social and economic changes associated with development impacts. Monitoring therefore implies the systematic observation and collection of a potentially large quantity of information over a period of time.

Monitoring the environment involves the continuous paying attention to the actual and likely effects any activity has or may have on the environment whether short-term or long term.

The information collected while monitoring the environment can be used to adjust or put in place suitable mitigation measures in case of a development with likely significant impacts.

To monitor means observe, listen and take careful note of what is said or is happening in order to get information. Simply put, it is to pay attention.

Why is it important to Monitor the impacts of Oil and Gas exploration on the Environment?

Oil and gas exploration activities have the potential to cause a variety of impacts on the environment, especially in natural ecosystems where these impacts are seriously harmful for the environment to balance.

These impacts depend upon the stage of the process, the size and how difficult the project is, the nature of the surrounding environment and the effectiveness of planning, pollution prevention, mitigation and control methods.

It is therefore important to monitor the impacts of oil and gas exploration activities in order to reduce on the effect the activities are likely to have on the environment.

3.1 IMPACTS OF OIL AND GAS EXPLORATION ON THE ENVIRONMENT

The potential impacts of oil and natural gas exploration activities may have on the environment may be with regard to:

- Plants,
- animals,
- soil, air quality,
- water quality and
- social-economic impacts.

When oil and gas exploration activities are going to be carried out, the oil exploration company will first identify and then build or construct an oil drilling site. Construction impacts will mainly arise from construction of the drill pad and access road.

Environmental Monitoring under the National Environment Act is defined as the continuous determination of actual and potential effects of any activity on the environment whether short or long term.

3.1.1. Impacts of the Construction of the drilling site and access road on the environment.

The construction of the drilling site will involve the use of heavy equipment and vehicles to transport material for building of the road and the drill pad.

During drilling, it is advisable that you:

- keep away and not close to the oil sites to avoid risks from accidents;
- restrict movement of both of animals and people;
- are not harassed or forced into selling your land or property;
- cross roads carefully to avoid accidents from the increased traffic in the area.

1. Impact on animals and plants

Animal and plant communities may be directly affected by changes in their environment through variations in

- water,
- air and
- soil quality
- and through disturbance by noise, light and changes in vegetation cover.

During the construction or building of the drill site, grass and trees are cleared and cut. This usually results into loss of vegetation, important plants like herbs and grazing pastures.

Such changes may directly affect the surrounding environment of the plants and animals for example the area where these plants and animals live, their food and nutrient supplies, the area where they breed, mitigation routes, or changes in grazing patterns which may have secondary effect on predators.

(i) Impact on the animals

Animals that live within the community can be directly affected by changes in their environment during the construction or building phase.

- The impacts of the construction phase will be caused from vibrations from the drilling rig and movement of heavy trucks. The noise and air pollution may disturb the birds.
- The place where the animals live will be mainly affected because the construction or building of the drilling site will involve the use of heavy machinery and ground leveling using big machines known as graders which require the vegetation to be cleared and the top soil to be removed. This will result into reduction in grazing land for wildlife.
- The bright light which is given off during drilling has the likely possibility of disturbing feeding and ranging patterns of animals such as elephants and night-time meat eating animals such as hyenas and lions.
- There is a possibility that animals will be migrate or move away to other areas during oil drilling. This may negatively impact on the tourism in the community.

(ii) Impacts on Plants

Plants offer major advantages over other living things because they offer food to other living organisms such as animals. If plants are removed, then some animals are bound to go without food.

2. Impacts on Agriculture

Most rural areas in Uganda practice small-scale agriculture as their main source of livelihood. The main crops grown in the area where oil exploitation is occurring include cassava, maize, tomatoes, beans, sweet potatoes, groundnuts and cash crops such as tobacco and sisal. There is also the rearing of cattle, goats, sheep, poultry and pigs.

Large scale agriculture is also carried out on large commercial farms e.g. tea, tobacco and sugarcane.

If there is no proper planning in place, oil exploration could have negative impacts on agricultural activities in the community.

(i) Impacts on Soil

There will be impacts on soil during the construction or building and operation of the oil drilling site. The removal of soil during grading activities for the building of the access roads and the drilling pad will be a negative direct effect; that will lead to loss of vegetation, loss of grazing land for wildlife and will also lead to increase in dust.

- During the building of the drilling pad, heavy vehicle movements will impact on topsoil by compacting it and by removal of the vegetation exposing the soil to erosion by wind and surface water flow.
- Grading and removing of soil has the potential of altering drainage patterns, which could result in increased soil erosion and in silting of wetlands and streams.
- Fuel spillage and leakage may also occur due to human error or faulty equipment.
- Maintenance chemicals such as oil and lubricants may also spill onto the ground. Any spillage or leakage will lead to soil contamination leading to loss of vegetation, loss of grazing land and can also lead to surface water and ground contamination thereby impacting on water sources for wildlife.

3. Impact on air quality (Atmospheric Impacts)

In order to examine the likely impacts arising from oil and gas exploration activities, it is important to understand the sources and nature of the fumes coming from the oil exploration activities and their relative contribution to the surrounding air.

The primary sources of contamination of the surrounding air from oil and gas exploration activities arise from:

Atmospheric impacts will affect the air surrounding you making it unclean, hence air pollution.

- You may begin to notice that the smell of the air is not very fresh; there may be a lot of dust in the air.

This may make breathing difficult or may cause discomfort and eventually lead to health defects.

- **Flaring**

This means to burn with a bright flame for a short time. During oil exploration activities there may be flaring (a sudden light or flame) when this happens several times continuously it has an impact on the surrounding air in the environment.

- **Venting**

Is the controlled release of gases into the atmosphere during oil and gas operations. The gases may be natural or other hydro carbon vapours, water vapour and other gases such as carbon dioxide separated during the processing or natural gas. Natural gases produced during venting are released directly into the atmosphere and are not burned.

Safe venting is achieved when the gas is released at high pressure and is lighter than air. Unlike flaring, venting is not a visible process though it can generate some noise depending on the pressure of the vented gases.

- **Combustion process:**

This is the act of catching fire and burning. During oil drilling activities, there are several machines that are used to drill into the ground and to carry out other activities related to oil drilling and oil exploration.

Picture below: Oil test flaring by Heritage Oil Company workers



Used up fumes from internal combustion engines.

These include carbon monoxide and other gases. Machines such as generators for electricity, drill rig power transmission system to generate either direct power or electricity to power the rotary drive and the draw works use diesel engines and gas turbines. When they are used, they give off fumes and smoke that pollute the surrounding air.

- Gases that escape from loading operations and large containers used for storing gas as well as gases that escape during filling storage tanks and containers, drilling mud and use of solvents and oil paints.
- Soil particles (dust) in the air from soil disorder during the construction of the oil exploration site and generated by wind and vehicle traffic, dust from other burning sources such as well testing, cement dust, dust from chemical additives to the mud system.

4. Impacts on Water resources and aquatic life

This may be in two ways on **surface water** and **ground water**.

Surface water is largely made up of lakes, rivers, streams, wells and ponds.

Ground water on the other hand is water below the rocks (soil structure).

Some noticeable impacts on ground water may include:

- Change in the in water cycle;
- Change in water colour;
- Reduction in the amount of water in the water bodies;
- Change in the taste of water;
- Flooding as a result of heavy silting(movement of soil into the water);
- Change in the movement of animals that live in these water bodies;
- Death of aquatic life e.g. fish dying as a result of poisoning from the waste discharges into the water bodies and the disappearance of water plants; and
- Accumulation of water weeds on the water.

(i) Potential impacts on surface water include:-

- Direct surface water contamination from spills and leakages, and indirect contamination through contact with contaminated soil and groundwater.

The impact of surface water contamination is low given the proposed drill site separation distance from the water bodies.

(ii) Potential impacts on ground water include:-

- Indirect groundwater contamination from contact with contaminated soil

- annular space in water supply wells caused by an improper completion.

- Other direct aquifer contamination may be due to improper oil well covering or due to improper procedures of abandoning/leaving the well.

- Excess groundwater abstraction at the drill site can result in aquifer depletion and

may adversely affect the quality of the groundwater.

This is a negative direct impact that may be permanent.

3.1.2 Impact of Waste generated during drilling and completion activities on the oil drilling site.

Oil exploration activities produce a large amount of waste which should be managed and properly disposed off before being released into the environment.

Ground water contamination can also occur from the waste water discharged from kitchen and bathrooms at the drill site.

Waste is generated at the drill site during the establishment, operation, maintenance and decommissioning stages. Waste can be in solid, liquid or gaseous form.

The major wastes during exploration include:

- drill cuttings;
- building waste and packaging materials;
- cement returns and scrap metal;
- oil leaks, chemical spills and fuels;
- emissions into the air including smoke, dust and fumes;
- used oil, oily rags, solvents, batteries and filters;
- empty petroleum hydrocarbon cans and other storage containers.

Noticeable changes may include:

- increase in the amount of dust in the air;
- fumes and smoke in the air; and
- changes in water colour or taste.

Impact on Animals

Animals are likely to be disturbed due to vibration and noise from moving heavy equipment generator and from night lighting causing light blight.

1. Impact on soil

Soil may be contaminated due to spillage.

2. Impact on Air quality

- Emissions from combustion engines
- Air emissions from vehicle idling, electric generator, fumes that are given off from storage and during fueling.

3. Impacts on surface and ground water

- Surface water contamination due to wastewater, and chemical spills and leaks and
- Ground water contamination due to waste water, and chemical spills and leaks of chemicals and fuels.

A. Impact of the decommissioning of the drill pad and drill site

After all the oil activities have been completed, all the necessary equipment that was used in constructing the drill pad is removed from the site.

A drill pad is the area where the drilling of oil is carried out; where the drill string begins its way into the earth.

3.1.3 Impacts associated with decommissioning of the drill pad.

1. Impacts to animals

Disturbance of animals due to vibration and noise from moving heavy equipment.

2. Impact on plants and Vegetation

- Increased potential for vegetative re-growth after reapplying topsoil.
- Loss of vegetation from heavy equipment movement.

3 Impacts on soil

Soil contamination due to spillage (e.g. from refueling operations, fuel storage).

4. Impacts on air quality

- Air emissions from construction equipment moving on the road.
Dust generated by wind and by vehicle movements on the road.

5. Impacts on surface water and ground water

- Surface water contamination.
- Groundwater contamination.

Look out for the following at the deconstruction stage of oil & gas exploitation

- ✓ Contamination of water from dangerous scrap metal;

- ✓ Soil contamination due to spillage e.g. from refueling operations and fuel storage
- ✓ Soil erosion and loss of vegetation in the area;
- ✓ pollution of dangerous gases from heavy moving trucks, dust & smoke from exploration other related activities;
- ✓ disturbance to animals due to vibration and noise from moving heavy equipment;
- ✓ disturbance to the population.

Also Observe:

- Whether there have been any changes in your community since the construction begun;
- Whether there are any changes in animals' behaviour since the construction at the oil site begun;



- If there is any change in vegetation since the construction begun;
- If there are any changes in the colour or taste of the water from any water source.

Above: Excavation works at an oil drilling sites in Rukungiri District by Dominion. (Source: The New Vision).

3.2 The General Social-economic impacts of oil and Gas exploration activities on the environment.

Oil and gas exploration activities are likely to bring about social, economic and cultural changes. The extent of these changes is especially important to the communities particularly those living near or in the area whose traditional life style is affected. There are both positive and negative impacts.

3.2.1 The positive impacts include:-

- **Economic Empowerment:** oil drilling and exploration activities will result into more money being spent within the area thereby improving the general income levels of the population. There will be an increase in business opportunities for local traders to provide goods and services.
- **Employment opportunities:** the oil drilling and exploration activities will require both skilled and non skilled labour for local personnel. The number of local jobs is likely to increase during the course of the activities.
- **Infrastructure development:** the corporate social responsibility of the oil and gas exploration companies (the developer) to the communities will be to respond to the provision, education, health facilities, among others.

3.2.2 Negative impacts include:

- The local labour force to be hired will be exposed to work related hazards.
- Safety and health of the community and workers: if workers are not adequately trained or given appropriate personal protection equipment, there is a potential risk exposure.
- The population living along the mobilization route will be exposed to the risk of accidents from moving vehicles.

3.2.3 Socio-Cultural Impacts

Oil exploration is likely to have impacts on the socio-cultural fabric of the communities where it is exploited. During oil exploration activities, vegetation and top soil may be removed for instance during construction of access roads, and the drilling site. This may destruct some cultural sites.

Consultations with communities about the local beliefs have to be undertaken to establish what beliefs or sacred places are in the area to be developed. This is because some of the removed vegetation and "holy" or sacred features like trees, rocks may serve as shrines. Some of these "holy" or sacred features such as rocks, hills and trees may serve as homes to gods to whom the local people seek counsel for different reasons for instance, to be freed from diseases, bring rains good harvests among others. It is therefore important to consult the locals about traditional beliefs before such areas or features are destroyed.

4.0 SECTION THREE

Monitoring and Managing Impacts of Oil and Gas exploration on the Environment.

This section discusses and explains the ways in which the above impacts on the environment can be monitored and managed.

Environmental impacts of significance that arise from oil and gas exploration have been explained above.

The Constitution of the Republic of Uganda of 1995 provides among its National Objectives (Objective No. XXVII) that:

- the state shall promote sustainable development and public awareness of the need to manage land, air and water resources in a balanced manner for present and future generations.
- utilization of natural resources shall be managed in such away as to meet the development and environmental needs of the present and future generations of Uganda, particularly taking all measures to prevent or minimize damage and destruction to land, air water resources resulting from pollution or any other kind of natural resource degradation.

4.1 ENVIROMENT IMPACT ASSESSMENT(EIA).

Part V of the NEA requires a developer to develop an Environment Impact Assessment (EIA) for a project. This part defines and sets out the role and procedures of the EIA process for all activities likely to harm or have an impact on the environment.

Every development usually has environmental impacts of the activity being carried out.

EIA is a process that analyses the positive and negative effects of a proposed project, plan, or activity on the environment. This may include studies on plant, animal, soil, human, health and cultural impacts. It is one of the measures taken to ensure sustainable development.

An EIA should be conducted before the commencement of a project. By studying the possible impact that they may have on the environment; it is possible to

eliminate or avoid adverse impacts or costs that would be met after damage by either redesigning the project or by taking mitigation measures.

EIA must be comprehensive, focused, relevant, cost effective and must consider all alternatives including "no actions" alternatives.

The companies that have been contracted by the government to carry out oil and gas exploration activities must submit an EIA. This EIA is in a prescribed form and prescribed material must be included.

EIA is usually made for:

1. the developers/ project proponents;
2. the project approving agency/ lead agency;
3. the public;and
4. the private sector including banks and or financiers.

If the EIA is written for the public, it must be brief and in simple language. If the EIA is meant to inform it must be brief and in a simple and fully representative format. If meant for the developer, it must be written in such a way that difficult scientific and other technical information is easy to digest.

Functions of an EIA.

- ❖ The primary function of an EIA is to avail both the developer and authorities such as NEMA and the Town Planners, the opportunity to choose projects with the full knowledge of their impact on the environment. It also enables the relevant authorities to decide whether to allow the project to proceed or not. This will save the developer time and costs that would have been incurred and enables him/her to develop plans and policies for mitigation such impacts.
- ❖ EIA enables developers and decision makers to predict and assess the potential impacts of the project on the well-being of the natural environment and also helps them identify alternatives through recommending the implementation of appropriate modifications/actions that integrate economic, social and environmental concerns.

- ❖ EIA is designed to enable the environmental effects of a project to be weighed on a common gauge with economic costs and benefits.
- ❖ It is a legal requirement for any project that is likely to have undesirable effects on the environment to carry out an EIA. Hence any developer found to disregard the law will have legal action taken against him or her.

Environmental Monitoring and Impact Assessment

Under the Environment Impact Assessment Guidelines, two systems of monitoring are specified; these are:

- **Self monitoring** whereby the developers themselves are encouraged to monitor the impacts of their activities and;
- **enforcement monitoring** done by government agencies such as NEMA through environment inspectors.

The legal framework for EIA under the Act is summarized as follows:

- ❖ A developer of a project is required to submit a project brief to the lead agency
- ❖ Where the development described in the brief is considered to have or likely to have any impact on the environment, an EIA shall be undertaken by the developer of the project.
- ❖ Where the project is likely to have an impact on the environment, an environment impact evaluation shall be conducted.
- ❖ Where an EIA finds that the project will have a significant impact on the environment and after considering the environment impact review or the environment impact evaluation, an environment impact study shall be conducted.

For meaningful citizen involvement, Principle 10 of the Rio Declaration lists three fundamental access rights:

1. participation in environmental decision making(public participation);
2. access to environmental information and;
3. judicial and administrative proceedings (access to justice).

4.2 PUBLIC PARTICIPATION

What is public participation?

Public participation is the involvement of citizens in decision- making processes of the government.

Public participation is an open, responsible process through which individuals and groups within selected communities can express their views and influence decision-making.

Public participation is a right that is enshrined in the Constitution of Uganda. Under Article 38, the Constitution provides for citizen participation in the affairs of government, individually or through representatives in accordance with the law.

Article 38 (2) states that, every Ugandan has a right to participate in peaceful activities to influence the policies of government through civic organization.

Public participation is a democratic process of engaging people in thinking, deciding, planning, and playing an active part in the development and operation of services that affect their lives.

Principle 10 Rio Declaration.

This principle was internationally recognized under the Rio Declaration at the United Nations Conference on Environment and Development in 1992 in the Brazilian city of Rio de Janeiro. It states that environmental issues are best handled with the participation of all concerned citizens.

Section 3 of the NEA provides every person a right to a healthy environment and a duty to maintain and improve the environment including the duty to inform the authority of all activities likely to harm the environment. Therefore the public has a right to know what the developer is doing or intends to do.

The NEA and the National Environment (Environment Impact Assessment) Regulations under Regulation 12 provides for public in-put in the EIA, and environment audits through the rights to participate, to information and the

general right to bring actions to prevent or stop an activity or project with effects that are harmful to the environment. It also empowers local environmental committees to take action to redress local environmental concerns.

The Act creates a duty on the developer to take all measures necessary to seek the views of the people in the communities which may be affected by the project during the process of conducting the study.

4.3 ENVIRONMENTAL RESTORATION ORDERS

Restoration orders are issued under Section 67 of the NEA requiring a person to restore the environment, or to prevent a person from harming the environment. They may award compensation for harm done to the environment or and levy a charge for restoration undertaken. Restoration Orders are issued by NEMA or court giving the person a minimum of 21 days to restore what he has destroyed.

Section 70(i) of NEA states that,

“where a person on whom an environmental restoration order has been served fails, neglects or refuses to take action required by the order, the Authority (NEMA) may with all necessary workers and other offices, enter or authorize any other person to enter any land under the control of the person on whom that order has been served and take all the necessary action in respect of the activity to which that order relates and otherwise to enforce that order as may deem fit”

These restoration orders can be used to monitor and manage the oil and gas exploration impacts on the environment. Oil and natural gas exploration is a developmental activity that will affect the lives of the community within which this activity is being carried out.

It is therefore important for the community to be involved in government decision making processes.

How the Community can participate in Monitoring and Managing Impacts of oil and Gas activities on the environment.

The community members can get involved in public participation at many different levels. Here are some ideas:

Public Participation in Enforcement.

You can participate in the enforcement process by:

- reporting offenders by lodging complaints;
- assisting in surveillance and monitoring;
- assisting in investigations and inspections;
- prosecuting offenders;
- filing citizen suits in courts of law. This is referred to as **Public Interest Litigation**.

Effective public participation in the enforcement process involves:

- knowing your legal rights and solutions;
- applying your legal rights
- having information that you can access;
- having clear environmental standards against which violators can be compared e.g. deadlines for compliance, emission levels, noise levels etc.

Participation is a fundamental right for all people;

- Decisions made by people on their own will often be better than those made for them by other people, because people know what they need in their own lives.
- Skills learned through participation can be extended to other aspects of participants lives; for example, the experience of participation often leads to a general increase in personal confidence and development.

4.4 ACCESS TO INFORMATION

Effective access to meaningful information is the first step in empowering community members to exercise a degree of control over resources so that they can be able to monitor and manage the environmental impacts. The right to know is the basis for stakeholder involvement in environmental decision making processes

that affect the lives of the people living in the community. The right to information gives the public a practical tool to oversee government decision-making and conduct.

Article 41 of the Constitution of the Republic of Uganda provides for access to information. It states that,

"every citizen has a right of access to information in the possession of the state or any other organ or agency of the state, except where the release of the information is likely to prejudice the security or sovereignty of the state or interfere with the right to the privacy of another person."

Article 41(2) states that Parliament shall make laws prescribing the classes of information referred in clause (1) of this article and the procedure for obtaining access to that information.

The Access to Information Act of 2005 further specifies the constitutional guarantee of access to information. It prescribes the procedures for obtaining access to information and making complaints against refusal to release information.

The National Environment Act also sets out general legal framework and policy objectives for sustainable management of environment in Uganda.

Working with others makes the task easier, and you usually come up with a more complete

It encourages the participation by the people of Uganda in the development of policies, plans and processes for the management of the environment as well as the equitable use of natural resources for the benefit of present and future generations.

The law requires the government to generate and distribute environmental information in connection with individual projects and natural resource management as part of general education. However, many communities generally have little knowledge about government services and opportunities for them to access information.

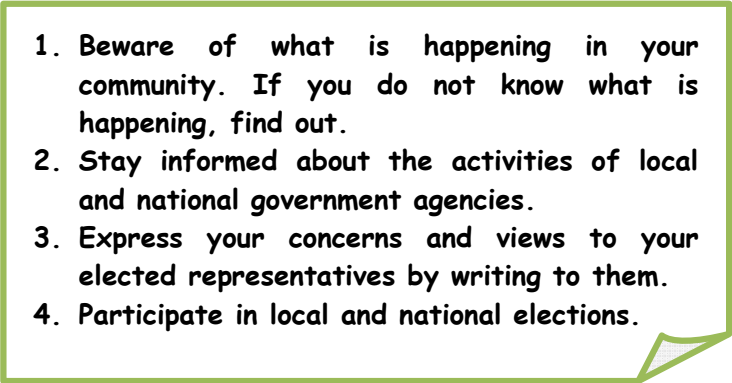
4.4.1 How community members can access information for Monitoring and Managing impacts of oil and gas exploration on the environment.

What you need to know.

To begin with, you have to make a list of the information you want and the possible government documents that might contain that information.

For example if you want to know the impacts of oil and gas exploration on the environment in your community, this information can be found in the Environment Impact Assessment (EIA), if any has been carried out.

An Environment Impact Assessment gives the details on the effects the proposed activity will have on the people, wildlife, plant life, soil, water, air climate conditions, cultural heritage, among other important things.

- 
1. Beware of what is happening in your community. If you do not know what is happening, find out.
 2. Stay informed about the activities of local and national government agencies.
 3. Express your concerns and views to your elected representatives by writing to them.
 4. Participate in local and national elections.

It should include the measure or means that are being proposed to minimize or lessen any bad effects of development, and the developer is required to consult with the public and other interested bodies or organizations.

Request the documents from the right place.

Information can be got from any public body; this includes government bodies, Ministries, departments, statutory corporation authorities or commissions.

Each of these bodies has an information officer and for the purpose of the Access to Information Act, the Chief Executive of each public body is responsible for ensuring that records of the public body are accessible.

Each district in Uganda has a District Environment Officer (DEO); they should be able to give you the necessary information you have inquired for. The DEOs get the

relevant information from the places where EIA is deposited. These include NEMA, UWA, and other authorities.

Your request must be in writing (and please remember to keep a copy of every request you make). Write as much detail as possible, describing the information you seek. You need to know the specific documentation that the information is in.

4.4.2 What to include in your request.

Make your request detailed enough so that the information officer or public body who the request is addressed to is required:

- (a) To provide sufficient particulars to enable the information officer to identify-
 - (i) the record or records requested; and
 - (ii) the person requesting the information;
- (b) If the request is made on behalf of a person, to state the capacity in which the person requesting the information is making the request.
- (c) The information officer of a body to whom an oral request is made shall reduce the request to writing and shall provide a copy of the request to the person requesting access.
- (d) The information officer of a public body/agency has the responsibility of transferring the request to a more appropriate body where necessary.
- (e) Respond to the request within 21 days.
- (f) The information officer, to whom a request for access has been made or transferred, may extend the period of 21 days for a further period not more than 21 days.
- (g) Respond to the request within 21 days.
- (h) The information officer, to whom a request for access has been made or transferred, may extend the period of 21 days for a further period not more

A person who, because of illiteracy or disability is unable to make a written request may make that request orally.

than 21 days. This extension should be notified to the person requesting within the original period of 21 days.

Requesting for Information

The information officer to whom a request for information is made will:

- determine in accordance with the Access to Information Act, whether to grant the request; and
- notify the person requesting the information of the decision, in a manner that is as reasonable as possible.

You may receive the document containing the information you are looking for.

If so, you are required to:

- pay the fee where an access fee is payable; and
- be availed with the information immediately as the person indicated in the request for access where no access fee is payable.

The form of Access. See copy of this form in TABLE A

If the record is in written or printed form, a copy of the record is supplied or arrangements are made for the inspection of the record.

What if the record is not in written or printed form?

- In the case of a record from which visual images or printed transcriptions of those images are capable of being reproduced by equipment which is available to the public body concerned, arrangements shall be made to view those images or to be supplied with copies or transcription of the images;
- In the case of a record in which words or information are recorded in a manner that they are capable of being reproduced in the form of sound by equipment which is ordinarily available to the public body concerned.

(a) By making arrangements to hear those sounds; or

(b) If the public body is capable of producing a written or printed transcription of those sounds by the use of equipment which is ordinarily available to it, the transcription shall be supplied.

- In case of a record which is held on computer, or in electronic or machine-readable form, and from which the public body concerned is capable of producing a printed copy of;

(a) the record, or part of it; or

(b) information derived from the record,

by using computer equipment and expertise ordinarily available to the public body, such a copy shall be supplied in that form.

Notice of rejection (see a copy of this form in TABLE A).

- Where the request is granted the above notice shall state the fee, if any to be paid upon access.
- Where the access is refused the notice shall state adequate reasons for the refusal.

What do you do if your request is rejected?

- The person who requested for the information may lodge an internal appeal or application with the court, as the case maybe, against the refusal of the request and the procedure, including the period, for lodging the internal application or appeal as the case may be.
- A person may lodge a complaint with the Chief Magistrate, against the decision of an information officer
 - (a) To refuse a request access

NOTE:

Send a copy of your initial request to any agency that may be involved in the oil and gas exploration activity as well as the company carrying out the exploration process. It also helps to inform different parties involved that you are seeking information so that they are motivated to co-operate.

REMEMBER TO ALWAYS KEEP A COPY OF ALL LETTERS YOU WRITE AND OR RECEIVE.

- A person aggrieved by the decision of the Chief Magistrate may within 21 days after the decision is communicated to him or her, appeal to the High Court against the decision of the Chief Magistrate.

How else can you access information?

- By asking the local community leaders;
- By writing to the proper authority requesting information that you would like to know.

If the proper authority does not respond, you can access the required information:

- through public consultations;
- by attending public meetings and consultations;
- by reading local and national news papers;
- by listening to the news on radio or television.

4.5 ACCESS TO JUSTICE

The concept of environmental justice is based on the fact that everyone should have the right to life in a healthy environment with access to environmental resources for a healthy life.

The standard indicators of access to justice are cited in the Constitution of the Republic of Uganda which provides for the right to a clean and healthy environment, as well as the National Environment Act.

Article 50(1) of the Constitution states that:

"Any person who claims that a fundamental or other right or freedom guaranteed under this constitution has been infringed or threatened, is entitled to apply to a competent court for redress which may include compensation."

Section 3 (3) of the National Environment Act states that in furtherance of the right to a healthy environment and enforcement of the duty to maintain and enhance the environment, the authority or local environment committee so informed is entitled to bring an action against any other person whose activities

or omissions have or are likely to have a significant impact on the environment to:

- (a) prevent, stop or discontinue any act or omission harmful to the environment;
- (b) compel any public officer to take measures to prevent or to discontinue any act or omission deleterious to the environment;
- (c) require that any ongoing activity be subjected to an environment audit in accordance with the Act;
- (d) require that any ongoing activity be subjected to environmental monitoring in accordance with the Act;
- (e) request a court order for the taking of other measure that would ensure that the environment does not suffer any significant damage.

The right to access justice is embedded in the provision above, the court process is a tool which can be used to enforce environmental laws so that the impacts of oil and gas exploration on the environment can be monitored and managed.

4.6 MITIGATION

Mitigating Impacts on animals

Clearing of land can be limited to removing grass from the drill pad and access road, except where it's absolutely necessary to remove a few trees and shrubs.

No significant bird habitats should be cleared or destroyed.

Mitigating impacts on mammals should mainly take the form of limiting habitat destruction through the following means:-

- ✓ restoring the drilling site following the conclusion of the work;
- ✓ restoring habitats to the state they were in before construction;
- ✓ limiting the width of the access road and site foot print to the required operational, health and safety requirements;
- ✓ constructing a fence around the drilling pad and keeping waste pit in the fence area;
- ✓ restricting the movement of heavy trucks and equipment to the road access;
- ✓ keeping the noise levels low and in accordance with established national noise level standards.

- ✓ limiting speed of project vehicles.
- ✓ directing all lights at the rig site to the area of the rig only.

Mitigating Impacts on Vegetation

In order that impact on vegetation is lessened, a number of measures have to be undertaken.

The proposed mitigation measures are:

- to ensure that clearing of the site and preparation activities for the road and drilling pad are limited and restricted to the measurements on given size for the access road and drilling pad.
- restricting equipment to specific areas to avoid taking up large areas of land and causing damage to pastures.
- avoiding cutting of trees where possible. Trees should only be cut in the area around the drilling pad.
- uprooting seedlings of trees and putting them in pots before construction of the pad and access roads so that main species destroyed in the process of construction and are replanted during site restoration.
- collecting seeds, drying and storing them until the time of restoring the site when they can be planted.



Mitigation means to reduce the seriousness of a harmful action.

Mitigating Impacts on Soil

Impacts on top soil can be mitigated by appropriate and precautionary planning of the oil and exploration activities.

Specific actions to be undertaken include:-

- using existing roads and access roads constructed for all transport.
- limiting road width and site footprint to that required to meet operational health and safety requirements;
- limiting erosion potential;

- putting proper drainage controls such as culverts and flow cut off ditches, in the design for storm condition so that offsite natural runoff does not wash over the site;
- removing top soil, rootstock, drilling pad and stock piled nearby from the road. Following the completion of the project, topsoil will be returned to the site;
- ensuring that depressions and valley bottoms for access roads are avoided as these could have seasonal streams or surface aquifers (in the dry season these would be evidenced by thick vegetation and changes in vegetation species).

Soil contamination can be avoided by carrying out the following:

- ✓ lining fuel and liquid chemicals and re-fueling facilities (if any) with material that cannot let liquids to pass through and strong storage capacity of the tanks;
- ✓ training all personnel involved in refueling activities in minimizing potential spills and leakages. Procedures for re-fueling should be developed and communicated as part of the training.
- ✓ in the event of spills onto the soil, contaminated soil will be allowed to decay using biological means (e.g. using bacteria, fungus e.t.c.) and spread out.

Mitigating impacts on Air Quality

The overall impact of exploratory wells on the atmosphere is of limited extent. However, mitigation measures will be implemented to reduce potential impacts. The following mitigation measures will be implemented in relation to air quality:-

- water sprinkling should be used to damp down dusty, dry surfaces such access road and the drilling pad;
- escaping emissions should be minimized through proper storage and handling (according to materials safety data sheets) of all fuels and chemical on site;

- exhaust emissions from combustion engines should be minimized by specifying low emission kit in the procurement process and by regular maintenance and servicing of equipment;

Mitigating Impacts on Water Quality

Both surface and ground water quality can be impacted by oils, fuels solvents and lubricants.

The following are the proposed mitigation measures on the impacts on water quality:-

- oils should be stored in tanks of good quality to avoid any leakages into the environment;
- all fuels and chemical storage tanks should be leak-proof, located on a surface that does not allow anything to pass through;
- the storage area should be lined to avoid spillage and seepage into the ground;
- the bund to be constructed should hold up more volume than the storage tanks;
- where an accident occurs, standard emergency measures should be employed to dissolve the situation for example fire extinguishers and delivering first aid to the victims;
- there should be provision for a fuel spill kit for use in controlling spills.

4.6 WASTE MANAGEMENT

Waste management is the collection, processing, transportation, recycling or disposal and monitoring of waste material.

Waste management usually relates to materials produced by human activity. Oil and gas exploration activities explained above such as construction of a drilling site, exploration drilling and the actual drilling process produce waste which must be properly managed.

Waste management is generally undertaken to reduce the effect of such waste on the environment.

Below: Abandoned camp equipment at Turaco-3 (Picture by Isaiah Owunji)



Best Practices on Waste Management:

- Spills and leaks should be prevented and other waste generation minimized; **this should be the principal form of mitigation.**
- Used oil should be kept in drums with lids. Suppliers (or licensed agents) of fuel should collect the used oil for disposal.
- A specific place where vehicles and machines shall be kept should be set up to avoid widespread spillage.
- Safe methods of waste disposal should be strictly adhered to. For example, metals, glasses and plastics should be placed in separate, clearly labeled waste bins with lids on them; Plastic water bottles should be collected and sent to factories for recycling.
- Glass bottles must be collected and given to dealers who sell them for reuse.
- Polythene material used in construction should be transported for disposal
- A suitably licensed contractor should be hired to remove from the site, any non bio-degradable / non-recyclable waste generated.
- Paper should be burnt in a dug pit. Any burning undertaken must be supervised by the safety/environment officer on site. Fire extinguishers should be placed at the location of burning.
- Organic waste should be placed and dug in a pit at the drill site and covered with soil periodically to avoid flies. At the end of the drilling the waste pit must be completely covered with soil to allow composting.
- Tins, cans and scrap metal should be kept in containers covered with lids and delivered to steel rolling dealers. A record of the type and quantity of waste generated at the drill site must be kept.
- The drill cuttings and waste water should be placed in pits lined with heavy-duty liner during the period of drilling on site.



Above: Left; A waste treatment pit managed by Tullow Oil Company; Photo Courtesy Robert Byaruhanga. Right: Hydrocarbon storage drums.

Drill cuttings/Waste water

This waste must be removed from the drilling site when the pits are full or at the end of the drilling period, whichever is first. The waste should be sucked into tankers to be transported to an already identified site.

Waste pits at the disposal site should be constructed and lined with heavy-duty pit liners or concrete to receive the waste transported by the tanker. The fenced waste pits should serve as temporary holding sites prior to appropriate treatment and final disposal.

Duties of communities in relation to Waste Management

- **At the individual level:** carry out sustainable activities, proper waste management, proper human and solid waste disposal, protection of plants and animals, live in a clean and healthy environment.
- **At household level:** have clean and decent housing, access clean water, sustainable energy use, plant trees.
- **For the larger community:** dispose of solid waste properly, protect water catchment areas, water sources, wetlands, hilly and mountainous areas, community forests, wildlife reserves and establish sustainable projects.

4.7 RESTORING THE SITE

At the end of the exploratory drilling and testing process at the site, the possible outcome is that the well:

- i) contains commercial quantities of hydrocarbons- a discovery and potential oil producing well, or
- ii) does not contain money making quantities of hydro carbons ; a dry well.

When drilling operations are completed and the well is closed and deserted or suspended, the drill site must be restored to its original state as much as possible.

In the event of the discovery of an oil producing well, a wellhead should be put up above the cased borehole. The wellhead should be protected by constructing a concrete cellar or steel cover over the wellhead. The cellar walls should be raised above existing level. Bars for strengthening

must be tied in with the existing walls.

The cellar should be filled with compacted sand which must surround the wellhead and ensure there is no empty space within the cellar.

Suitable natural aeration to allow any likely gas build up within the celler to escape naturally must be included.

In the event of a dry hole, the open borehole formations should be sealed with a cement cap to prevent upward movement of formation fluids and with the added benefit of preventing downward movement of poisonous substances.

The site should be geo-marked and handed back to government.

In either event, all remaining waste must be removed from the drilling pad and disposed of at the site. When the site is clear of all waste and equipment, the lining should be removed and the topsoil must be spread on the drilling pad.

The restoration involves removal of all infrastructure including buildings, equipment except at the area of the suspended well.

The top soil that was removed from the site during construction should be put back and grass/trees re-planted; the species used should be indigenous species and not unknown.

Murum should be removed, transported and put in the pit at the temporary storage site, to fill the site.

In case of contaminated soil, the soil should be scooped and transported to the temporary storage site for waste water and drill cuttings.

The contaminated soil should be left to decay by biological means under the control of micro-organisms.

5.0 SECTION FOUR

What Action should the Community take?

1. You should know your rights.

These include the right to:

- a) a clean and healthy environment;
- b) to access justice;
- c) participate in public processes and ;
- d) right to access information.

2. You should know what is happening in your community and seek information.

Here are some ideas how to go about the above:

- Find out what is happening by writing letters about the concern to your local leaders, elected representatives and government bodies;
- Stay informed about activities of local and national agencies by reading national and local newspapers, listening to news on the television and radio;
- Participate in or start discussions with your friends, family and neighbors, local leaders;
- Express your concerns to elected representatives;
- Participate in local and national processes
- Volunteer with a community based organization that represents your ideas and beliefs;
- Attend community meetings and consultations to get information, discuss issues and give your opinion or support.

3. You should know the type of information you are looking for and where to get it.

To begin with, make a list of the information you want and the possible government documents that might contain that information. For example if you what to know

the impacts of oil and gas exploration on the environment in your community, this information can be found in the Environment Impact Assessment (EIA).

4. You can demand for action and participate in the enforcement process by:

- lodging complaints and concerns though for instance signing petitions;
- reporting offenders;
- assisting in surveillance(observing) and monitoring;
- assisting in carrying out investigations and inspections;
- prosecuting offenders;
- filing citizen suits in courts of law. This is referred to as **public interest litigation**.

We all have a duty to act and make our environment better.

As a responsible member of the community, you should act and prevent any possible negative impacts on the environment as a result of the development activity.

This can be done through:

- i. equipping yourself with knowledge and skills;
- ii. noting down the changes you have observed since the start of the development/activity.
- iii. raising your concerns and engaging the responsible people e.g. oil companies, elected representatives (Honourable Members of Parliament and Local Councilors), Local Governments and government institutions.
- iv. demanding that your rights are respected and laws are enforced.

■ **As responsible government and Oil companies;**

develop better **communication strategies** and ensure that information is disseminated through;

- Leaflets or info-sheets on oil and gas activities in the local languages;
- Setting up resource centers to provide specific information on oil & gas;
- encouraging citizens to participate in oil debates.

6.0 SECTION FIVE

Where to get information

Ministry of Energy and Minerals Development

29/33 Kampala Road, Amber House,
P.O. Box 7270. Kampala
Minister :Tel; 0414- 233331
E-mail memd@infocom.co.ug
Minister of State: Tel; 0414 232 598.

Petroleum Exploration and Production Department

P.O. Box 9 Entebbe
Tel: 0414 320889/4320714,
0414 4321354

Ministry of Finance, Planning and Economic Development

Plot 2-12 Sir Apollo Kaggwa Rd.
P.O. Box 8147 Kampala
Tel; 0414 230163, 4234023
E-mail finance@infocom.co.ug
www.finance.go.ug

Ministry of Tourism, Trade and Industry

P.O. Box 7103 Kampala
6/8 Parliament Avenue.
Tel; 0414443947, 4256395,
4314000
E-mail mintrade@mintrade.org
www.mtti.go.ug

Ministry of Water and Environment

P.O. Box 7096 Kampala
0414 342931, 0414 258191
Minister: Tel; 0414259420,
0414230891
Minister of State for
Environment: Tel; 0414 231020,
0414230891

Ministry of Agriculture, Animal industry and fisheries

P.O. Box 102, Entebbe
Tel; 0414 321107, 0414 4320901
E-mail: psmaad@infocom.co.ug

National Environment Management Authority (NEMA)

Plot 17, 19, & 21 Jinja Road
NEMA House
P.O. Box 22255 Kampala
Tel: 251 64/5/8, 4342717

Ministry of Local Government

2nd Floor, Southern Wing,
Workers' House.
Pilkington Road,
P.O. Box 7037, Kampala.

Uganda Wildlife Authority

Near Uganda Museum
P.O. Box 3530 Kampala.

Tel: 0414 355000

National Forestry Authority

Plot 10-20 Spring Road, Nakawa

Tel; 0414 230365 /360400

E-mail info@info.org.ug

Uganda Human Rights Commission

Plot 20/22/24 Buganda Road

P.O. Box 4929

Kampala.

Tel; 0414 348007/8, 4233757

E-mail: uhrc@uhrc.org

Directorate of Public Prosecution

Workers' House- 12th Floor,

P.O Box 1550, Kampala

DPP: Tel: 0414 332504

Deputy DPP: Tel: 0414 332508

**Department of Geological
Surveys and Mines**

Plot 21-29 Johnstone Street

P.O. Box 9,

Entebbe

Tel: 0414 320656

Email: minerals@infocom.co.ug

Uganda Investment Authority
Twed Plaza

Tel: 0414 342903/251854

Who to Contact for Legal Aid

Greenwatch Uganda

Plot 7/9 Suite F-5, 1st Floor

2nd Street Industrial Area.

P.O. Box 10120

Kampala

Tel: 0414 344613

Email: environment@greenwatch.or.ug

Uganda Law society

Plot 5A Acacia Avenue

P.O. Box 426

Kampala, Uganda

Tel: +256 414 342424

Fax: +256 414 342431

Email: uls@uls.or.ug

Legal Aid Project of the Law Society

Tel: +256 414 342412

E-mail: lap@uls.or.ug

Uganda Land Alliance

Plot 1521, Block 29- Mawanda Road.

P.O Box 26990,

Kampala.

Tel; 0414 540048

E-mail: ula@ulaug.org

List of Environmental Laws

NAME/ DESCRIPTION	NO. OF ACT/ INSTRUMENT
The Constitution of the Republic of Uganda	
The Environment (Wetlands, river banks and Lake shores Management) Regulations	Statutory Instrument No. 153-6
The Environment Impact Assessment Regulations	Statutory Instrument No. 153-1
The Fish Act	Chapter 197
The National Environment (delegation of waste discharge function) instrument	Statutory Instrument No. 153-4
The National Environment (Minimum Standards for Management of Soil Quality) Regulations	Statutory Instrument No. 59/2001
The National Environment (Noise Standards and Control Regulations	Statutory Instrument No. 30 of 2003
The National Environment (Waste Management) Regulations	Statutory Instrument No. 153-2
The National Environment Act	Chapter 153
The Plant Protection Act	Chapter 31
The water (Waste Discharge) Regulations	Statutory Instrument No. 152-4
The Water (Water Resource) Regulations	Statutory Instrument No. 152-1
The Water Act	Chapter 152
The Wildlife Act	Chapter 200

TABLE A

The request form is in the following prescribed form.

THE ACCESS TO INFORMATION REGULATIONS, 2011

THE ACCESS TO INFORMATION REGULATIONS, 2011

REQUEST FORM

(Please use a separate request form for each document requested)

1. Name of public body

(Please state the title of institution from which you are requesting access to a record)

.....
.....

2. Name of requester

.....
.....

3. Particulars of Requester

(Please indicate the address to which correspondence related to your request should be sent)

Postal

Address.....

Physical

address.....

Plot No:

.....

Street:

.....

A Community Based Guide for Monitoring Impacts of oil and gas activities on the environment.

Town/City:

.....

Telephone No:

.....

Fax No:

.....

E-mail address:

.....

Other:

.....

Description of record:

(Please state all the information available to you which will assist in processing your request)

Name/ Type of document

(if known).....

Reference/ File No.

(if known).....

4. Contents of document *(give brief description)*

.....

.....

Other *(please state any other details that may be relevant to the processing of the request)*

.....

.....

5. I would like to:

(Please check the relevant options)

- (a) Inspect the record
- (b) Listen to the record
- (c) View the record
- (d) Have copies made available to me in the following format
 - (i) Photocopy
 - (ii) Compact disk
 - (iii) Diskette
 - (iv) USB mass drive
 - (v) Transcript
 - (vi) Other (please specify); and

(e) Other (*please specify*)

6. Number of copies
required:.....

7. Request on behalf of
another.....

Signature of requester

.....

Date:

THE REPUBLIC OF UGANDA

THE ACCESS TO INFORMATION ACT, 2005

THE ACCESS TO INFORMATION REGULATIONS, 2011

NOTICE OF GRANT OF ACCESS

TO:

.....

(State the name of requestor)

TAKE NOTICE that-

Access to the record you request from (please state the name of the public body) on (date) has been granted.

1. Access fee payable
(state amount)

.....
.....

2. Form in which access shall be
given.....

.....
.....

Note: The requester may lodge an internal appeal or an application with the court against the access fee to be paid or form of access granted and the procedure, including the period for lodging the internal appeal or application as the case may be.

Date:20.....

.....

Signature of Information Officer

THE REPUBLIC OF UGANDA

THE ACCESS TO INFORMATION ACT, 2005

THE ACCESS TO INFORMATION REGULATIONS, 2011

NOTICE OF REFUSAL OF ACCESS

TO:

.....(*State the name of requestor*)

TAKE NOTICE that-

Access to the record you requested from (please state the name of the public body) on theday of20..... has been refused.

1. Reasons for the refusal
(exclude reference to content of the record)

(a)

(b)

(c)

(d)

(e)

(f)

2. Provisions of the Act relied upon

- (a)
.....
- (b)
.....
- (c)
.....
- (d)
.....
- (e)

Note: The requester may lodge an internal appeal or an application with the court against the refusal of the request and the procedure, including the period for lodging the internal appeal or application as the case may be.

Date.....20.....

.....

Signature of Information Officer.

7.0 SECTION SIX

THE COMMUNITY BASED ENVIRONMENT MONITORING TOOL

This tool together with the guide is intended to help the community members to monitor new developments in their community, access information on those activities and observe any impact as a result of the development on the environment and how the anticipated impacts may be reduced.

The tool therefore:-

- allows community members to express their views, concerns, priorities and criticism of the activities of the project;
- enables project administrators to better understand community concerns relating to the project;
- increases sense of ownership, public participation and;
- promotes good governance.

Access to Information

- What new development/ activity is taking place in your community?
- When did you know about this activity?
- Were you informed before the activity begun?
- Do you know where to get information about the activity from?
- Do you know who to complain to in case the activity is affecting your community
- When you complain, are your concerns addressed or ignored?

Know about oil & gas exploitation in your community

- i. Do you know about oil exploration?
- ii. Do you know of any oil exploration site?
- iii. Find out if the oil companies were given a license to drill oil in your area?

- iv. Ask for the agreements that were signed between your government & the oil companies.
- v. Find out if the oil companies are carrying out the activity as per the agreements signed.
- vi. Is there a poster or banner near the area where the activity is being carried out indicating the specific activity being carried out?
- vii. At what time is the drilling done?
- viii. Find out when production of oil & gas is going to start

The deconstruction stage of oil & gas exploitation may have some impacts;

- i. Do you know how long oil & gas activities will last in your community?
- ii. Find out what will happen when the production falls.
- iii. Find out the impact of deconstruction stage of oil & gas exploitation on your community.

Waste produced at the drill site may have impacts on your health and the environment. Find out the following:

- i. Have you observed any waste being produced at the drill site?
- ii. What kind of waste is being generated?
- iii. How is the waste handled by the company workers?
- iv. Does the produced waste create substantial waste disposal problems to the community and or environment?

Take notes

A Community Based Guide for Monitoring Impacts of oil and gas activities on the environment.

- v. Does the produced waste create a risk of accidents that may have serious consequences to the community and the environment?
- vi. Have you observed any effect in regard to smell as a result of the produced waste?

Your community needs you!!!

- ii. Find out what new activities are going to be carried out in relation to oil & gas exploitation in your community
- iii. Look out for information about oil & gas exploitation
- iv. Find out who the developers exploring oil & gas are by identifying the logos.
- v. Get involved at your level of every oil & gas exploitation activity planned in your community
- vi. What information has been provided to the community in regard to oil & gas exploitation?
- vii. Seek as much information as you can e.g. from news papers, District Environment Officers, church leaders, elected local council representatives, Civil Society Organisations (i.e. CBOs & NGOs) and radios about oil & gas exploitation.

Take notes

This tool is not intended to solve all the problems but is one of the many ways in which you can participate in the management of the environment through monitoring the impacts of oil & gas activities on the environment.

Both the construction of the access road & the drill pad may have impacts on your community; Find out;

- i. If there is any change on grazing land since oil & gas exploitation started in your community.
- ii. Whether there has been any disruption to animals since the construction stage started.
- iii. If there are observed changes in the tourism activity since the beginning of oil & gas exploitation.
- iv. If there are changes on the soil since the construction begun.

Impact on Water resources

- i. Are there any water bodies in your community?
- ii. What kind of water bodies are in your community?
- iii. What economic/social activities do you carry out on the mentioned water bodies?
- iv. What has been the impact of the oil & gas exploitation on the water body?
- v. Have you experienced any hazards such in the community, what are these hazards?
- vi. Is there any changes in for example direction of water flow, volume of water, number of fish caught, since the start of oil & gas exploitation?
- vii. Have you observed any changes in the movement of water animals or plants in the water bodies? If yes, what changes are these?
- viii. Is there an increase or reduction for the need for clean water in your community lately?

The clearing of vegetation may have impacts in your community.

- i. Name the types of vegetation found in your community.
- ii. Are there any changes on vegetation since the start of oil & gas exploitation?
- iii. What are these changes that you have observed?
- iv. Do you know the causes of these changes?
- v. Have the changes on vegetation impacted on you?

- vi. What are the effects of the changes you have mentioned to your community?
- vii. Have these changes led to the reduction of social benefits and services for instance access to medicinal plants and herbs, enjoyment of nature's beauty?

Impact on Air Quality

- i. Have you observed any dust, smoke or fumes in air as a result of oil & gas exploitation?
- ii. What have you observed in respect to smell in the air around your community since the oil exploration begun?
- iii. Are there any changes in air quality?

Socio-Economic Impacts

The new developments may impact on society. Find out the following:

- i. What positive impacts have you observed in your society since the coming into force of oil activities?
- ii. How have the above been of benefit to you in the community?
- iii. Has there been an increase in population or human settlements in your community since oil & gas exploitation begun?
- iv. How has the increase of people into your community affected you?

Take notes

- v. What problems if any, related to land use have you experienced in the community as a result of oil & gas exploitation?
- vi. Find out if the activities have affected areas of historical importance or important landscape elements to the local population in your community?
- vii. Are there any issues sensitive to the local population that you have observed?
- viii. Is there any child labour related cases in your community, what could be the cause of this?
- ix. What are the rates of children going to school?
- x. Are there any children dropping out of school? Why are these children dropping out of school?
- xi. Have you observed any changes in behaviour of animals in your community since the start of oil & gas exploitation?
- xii. Find out if the project has obstructed or led to substantial changes in the local population's use of natural resources other than those directly affected by the project activities.

Noise pollution impacts

Noise is usually produced during the activities of oil exploration and exploitation. This noise may be generated during the preparatory stages, the drilling, and from heavy moving vehicles. Certain activities which produce noise may take place at night.

- i. Is there noise being produced by oil activities that is not bearable?
- ii. Take note of when the un- bearable noise is produced.
- iii. How many times is the unbearable noise produced a day?
- iv. What is the impact of such noise on your community?

Impact on Agriculture

- i. Find out if there is any change in vegetation and whether the activities being carried out in your community will lead to substantial increase or decrease in land under cultivation.
- ii. What are the agricultural methods practiced in your community?
- iii. Have the oil & gas exploitation activities had any impact on agriculture in the community? If yes, what kind?
- iv. In your opinion, what is the community's involvement in agriculture with the coming of oil and gas?
- v. How do you transport your agricultural produce to the market centers?
- vi. Is there labour market and availability for local food production?
- vii. What are the traditional livelihoods of the people in your community? Do you think these will change with the coming of oil and gas?, please explain.
- viii. Have you observed any changes in crop yields or nutritional balance since oil & gas exploitation begun?
- ix. What changes have you experienced in respect of market, for your agricultural produce since the oil & gas exploitation process started?
- x. Find out if the activities have had any effect on domestic animals, e.g. spreading of diseases, increased grazing problems like limited pastures, water stress e.t.c.
- xi. Find out if there are any issues with fishing rights or if existing water users will be displaced in your community.

Impacts on Soil

- i. Is there any clearing of vegetation you have noticed in the community since oil & gas exploitation begun?

A Community Based Guide for Monitoring Impacts of oil and gas activities on the environment.

- ii. Why is the vegetation being cleared?
- iii. Have you observed any major changes as a result of this work in the community?
- iv. Is there any considerable pollution of soil that you have observed?
- v. Have members of the community been affected in any way?, Please explain.
- vi. What do you think is likely to happen as a result of this clearing of vegetation?
- vii. Are your leaders aware of what is going on in your community?
- viii. Are there any changes you have observed in soil colour since the construction of access roads began?
- ix. Have the activities led to substantial increase in erosion?
- x. Find out if the people clearing the vegetation have plans of restoring the site as it was before.

Land Issues

- i) Has the project caused major changes in landscape?
- ii) Will the changes above affect areas with historic remains or landscape that are important features in the community?
- iii) Do you have a land title to the land on which you are staying?
- iv) Who is the rightful owner of the land on which you are staying?
- v) Have you observed any major conflicts over land use and ownership in the community lately?
- vi) What do you think is the cause of the above conflicts?

Take notes

- vii) Do you expect to be relocated from your land?
- viii) Are there people whose land has been forcefully taken?
- ix) Have these people received any form of compensation?

Impacts on Aquatic life

- i) Find out if the activities being carried out in your community have affected areas with animal and plant life that are environmentally sensitive.
- ii) Have the activities led to pollution problems or unwanted algae and water plants' growth?
- iii) Find out if there are any new species of plant and animal lives that have been introduced in the water bodies.
- iv) What could be the cause of the new species?
- v) Are there any plant and animal species that have become rare?
- vi) Have you observed any increased risk to the spread of water borne diseases?
- vii) Have the activities led to considerable demand for clean water in the community?

Take Notes

[illegible]

Take Notes

[illegible]

About the Authors

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About Greenwatch

Greenwatch is an environmental rights advocacy organization whose aim is to promote public participation in the sustainable use, management and protection of the environment and natural resource and the enforcement of the right to a clean and healthy environment. At Greenwatch, we advocate for the enforcement of and compliancy with environmental laws and principles through research and training for increased environmental awareness. We support community initiatives through dissemination of information on environmental rights and laws for effective participation in decision making. Greenwatch is a member of the Civil Society Coalition on Oil (CSCO) in Uganda, a loose network of member organizations that seek to promote maximal benefits from Oil and Gas discoveries to the people of Uganda by promoting social, economic and environmental sustainability in the exploitation activities.

Open Society Initiative for Eastern Africa (OSIEA)

Open Society Initiative for Eastern Africa (OSIEA) is a part of global network of open society foundations.

OSIEA's work focuses on shaping public policy that will promote respect for human rights and the rule of law. Their goal is to amplify and support voices of East Africans championing respect for human rights and to create spaces for open and informed engagement on issues critical to advancing open society principles in East Africa.

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