



UNEP Ogoniland Oil Assessment Reveals Extent of Environmental Contamination and Threats to Human Health

Drinking Water Pollution in Some Places So Serious Immediate Emergency Action Needed

Full Environmental Restoration May Take Up to 30 Years with Calls for an Initial US\$1 Billion Fund to Kick-Start Clean-Up

Abuja, 4 August 2011 – The environmental restoration of Ogoniland could prove to be the world's most wide-ranging and long term oil clean-up exercise ever undertaken if contaminated drinking water, land, creeks and important ecosystems such as mangroves are to be brought back to full, productive health.

A major new independent scientific assessment, carried out by the United Nations Environment Programme (UNEP), shows that pollution from over 50 years of oil operations in the region has penetrated further and deeper than many may have supposed.

The assessment has been unprecedented. Over a 14-month period, the UNEP team examined more than 200 locations, surveyed 122 kilometres of pipeline rights of way, reviewed more than 5,000 medical records and engaged over 23,000 people at local community meetings.

Detailed soil and groundwater contamination investigations were conducted at 69 sites, which ranged in size from 1,300 square metres (Barabeedom-K.dere, Gokana local government area (LGA) to 79 hectares (Ajeokpori-Akpajo, Eleme LGA).

Altogether more than 4,000 samples were analyzed, including water taken from 142 groundwater monitoring wells drilled specifically for the study and soil extracted from 780 boreholes.

Key Findings

Some areas, which appear unaffected at the surface, are in reality severely contaminated underground and action to protect human health and reduce the risks to affected communities should occur without delay says UNEP's *Environmental Assessment of Ogoniland*.

In at least 10 Ogoni communities where drinking water is contaminated with high levels of hydrocarbons, public health is seriously threatened, according to the assessment that was released today.

In one community, at Nisisioken Ogale, in western Ogoniland, families are drinking water from wells that is contaminated with benzene-- a known carcinogen--at levels over 900 times above World Health Organization guidelines. The site is close to a Nigerian National Petroleum Company pipeline.

UNEP scientists found an 8 cm layer of refined oil floating on the groundwater which serves the wells. This was reportedly linked to an oil spill which occurred more than six years ago.

While the report provides clear operational recommendations for addressing the widespread oil pollution across Ogoniland, UNEP recommends that the contamination in Nisisioken Ogale warrants emergency action ahead of all other remediation efforts.

While some on-the-ground results could be immediate, overall the report estimates that countering and cleaning up the pollution and catalyzing a sustainable recovery of Ogoniland could take 25 to 30 years.

This work will require the deployment of modern technology to clean up contaminated land and water, improved environmental monitoring and regulation and collaborative action between the government, the Ogoni people and the oil industry.

Achim Steiner, UN Under-Secretary General and UNEP Executive Director, said the report provided the scientific basis on which a long overdue and concerted environmental restoration of Ogoniland, a kingdom in Nigeria's Niger Delta region, can begin.

"The oil industry has been a key sector of the Nigerian economy for over 50 years, but many Nigerians have paid a high price, as this assessment underlines," he said.

"It is UNEP's hope that the findings can break the decades of deadlock in the region and provide the foundation upon which trust can be built and action undertaken to remedy the multiple health and sustainable development issues facing people in Ogoniland. In addition it offers a blueprint for how the oil industry—and public regulatory authorities-- might operate more responsibly in Africa and beyond at a time of increasing production and exploration across many parts of the Continent," said Mr Steiner.

"The clean-up of Ogoniland will not only address a tragic legacy but also represents a major ecological restoration enterprise with potentially multiple positive effects ranging from bringing the various stakeholders together in a single concerted cause to achieving lasting improvements for the Ogoni people," said the UNEP Executive Director.

UNEP today presented its report to the President of Nigeria, The Hon Goodluck Jonathan, in the Nigerian capital Abuja.

Among its other findings are:-

- Control and maintenance of oilfield infrastructure in Ogoniland has been and remains inadequate: the Shell Petroleum Development Company's own procedures have not been applied, creating public health and safety issues.
- The impact of oil on mangrove vegetation has been disastrous. Oil pollution in many intertidal creeks has left mangroves—nurseries for fish and natural pollution filters--denuded of leaves and stems with roots coated in a layer of bitumen-type substance sometimes one centimetre or more thick.
- The five highest concentrations of Total Petroleum Hydrocarbons detected in groundwater exceed 1 million micrograms per litre ($\mu\text{g}/\text{l}$) – compared to the Nigerian standard for groundwater of 600 $\mu\text{g}/\text{l}$.
- When an oil spill occurs on land, fires often break out, killing vegetation and creating a crust over the land, making remediation or revegetation difficult. At some sites, a crust of ash and tar has been in place for several decades.
- The surface water throughout the creeks in and surrounding Ogoniland contain hydrocarbons. Floating layers of oil vary from thick black oil to thin sheens.
- Despite community concerns, the results show that fish consumption in Ogoniland, either of those caught locally or purchased from markets, was not posing a health risk.

The report says that fish tend to leave polluted areas in search of cleaner water. However, the fisheries sector is suffering due to the destruction of fish habitat and highly persistent contamination of many creeks. Where entrepreneurs have established fish farms for example their businesses have been ruined by an “ever-present” layer of floating oil.

- The Ogoni community is exposed to hydrocarbons every day through multiple routes. While the impact of individual contaminated land sites tends to be localized, air pollution related to oil industry operations is all pervasive and affecting the quality of life of close to one million people.
- Artisanal refining (a practice whereby crude oil illegally obtained from oil industry operations is refined in primitive stills), is endangering lives and ultimately causing pockets of environmental devastation in Ogoniland and neighbouring areas.

Remote sensing revealed that in Bodo West, in Bonny LGA, an increase in artisanal refining between 2007 and 2011 has been accompanied by a 10% loss of healthy mangrove cover – or over 307,380 square metres.

- Remediation by enhanced natural attenuation (RENA) – a way of boosting the ability of naturally-occurring microbes to breakdown oil and so far the only remediation method observed by UNEP in Ogoniland – has not proven to be effective.

Currently, SPDC applies this technique on the land surface layer only, based on the assumption that given the kind of oil concerned, factors such as temperature and an underlying layer of clay, hydrocarbons will not move deeper. However, in 49 cases UNEP observed hydrocarbons in soil at depths of at least 5 m.

Next Steps Recommendations

Through a combination of approaches, individual contaminated land areas in Ogoniland can be cleaned up within five years, while the restoration of heavily-impacted mangrove stands and swamplands will take up to 30 years.

However, according to the report, all sources of ongoing contamination must be brought to an end before the clean-up of the creeks, sediments and mangroves can begin.

The report recommends establishing three new institutions in Nigeria to support a comprehensive environmental restoration exercise.

A proposed **Ogoniland Environmental Restoration Authority** would oversee implementation of the study’s recommendations and should be set up during a Transition Phase which UNEP suggests should begin as soon as possible.

The Authority’s activities should be funded by an **Environmental Restoration Fund for Ogoniland**, to be set up with an initial capital injection of US\$1 billion contributed by the oil industry and the government, to cover the first five years of the clean-up project.

A recommended **Integrated Contaminated Soil Management Centre**, to be built in Ogoniland and supported by potentially hundreds of mini treatment centres, would treat contaminated soil and provide hundreds of job opportunities.

The report also recommends creating a **Centre of Excellence in Environmental Restoration** in Ogoniland to promote learning and benefit other communities impacted by oil contamination in the Niger Delta and elsewhere in the world.

Reforms of environmental government regulation, monitoring and enforcement, and improved practices by the oil industry are also recommended in the report.

Notes to Editors

The *Environmental Assessment of Ogoniland* report is available online at:
www.unep.org/nigeria.

Site-specific fact sheets containing detailed information about 67 of the contaminated sites studied in detail are also available at this website.

This report details how the UNEP team carried out their work, where samples were taken and the findings that they have made.

The UNEP assessment, alongside options for remediation, was conducted at the request of the Government of Nigeria. If requested, UNEP is willing to remain a committed partner of the Nigerian authorities and of the Ogoni people as they address the environmental challenges ahead.

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