

PROBLEM OF OIL SPILL IN NIGERIA: CAUSES AND SOLUTIONS

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Oil spill is a type of pollution that occurs mostly on water as well as on land and can have devastating effects on plant and animal life, and the environment. It occurs mainly as a result of human activity (exploration and transport of oil) and is the release of oil/liquid petroleum hydrocarbon into the aquatic environment such as oceans and coastal waters and on land. Spills may occur of crude oil (unrefined oil) from tankers, oil rigs and platforms and oil wells as well as during the transport of the refined petroleum product in vessels and tankers.

Oil spills largely affect the plumage of birds and fur of mammals by penetrating it and thereby affecting its insulation abilities thereby making them less able to adapt to temperature fluctuations and less buoyant in water. Oils may also blind certain animals which reduces their ability to avoid predators and they may this be killed, which can lead to that animal species being endangered. Plankton, larval fish, seaweed, oysters and bottom dwelling organisms are strongly affected by oil spills because sunlight cannot penetrate through the oil slick to the bottom of the ocean and therefore affects producers. When microscopic plants cannot photosynthesize and manufacture their food, they cannot release oxygen for the bottom dwelling aquatic organisms which leads to their death. When these organisms die, fishes cannot feed on them so they die as well, humans that have fish farming as a means of livelihood have their livelihoods denied them and may have to relocate. The biodiversity of a place where a spill has occurred is greatly affected.

Oil spills occur largely because there is a demand for oil has a source of energy. Oil is used in one way or another in our day to day activities.

Hundreds of oil spills reported in Nigeria every year are ruining the environment and putting human lives at risk. Oil spills in the Niger Delta are the result of pipeline corrosion, maintenance issues, equipment failure, sabotage and theft. There was also one that happens in Isawo Ikorodu, Lagos in 2013. It was a result of pipeline corrosion, sabotage and theft.

Oils spill clean ups can be carried out using a variety of approaches, depending on the type of oil spilled, layout of the spill area, the temperature of the water etc. Some bacteria such as Sulfate reducing bacteria which are anaerobic (can survive without oxygen) can be used to clean up oil spills are they are oil consuming bacteria. This is called a bio-remediation approach because it entails the use of micro organisms to biodegrade/eats up the oils.

Controlled burning is also another approach that has been used to clear out oil spillages but it brings about air pollution issues.

Bio-remediation accelerator is another approach which entails using chemicals to

chemically and physically bond the hydrocarbon oil molecules. But this creates air pollution issues.

Dispersal agents have been used on oil spills as well, this prevents the oil suspension from forming clumps or settling, thereby rapidly dispersing the oil over a large surface area from which water soluble micelles are formed.

The use of a centrifuge has been commonly employed and works by sucking up oil and water after which the oil is separated from the water and the water pumped back into the ocean. The downside of this approach is that some oil may be pumped back into the ocean along with the water.

Finally, the best approach may be to do nothing and let nature take its course. This is actually a remediation approach and is regarded to as natural attenuation. This is particularly ideal in certain ecologically sensitive areas where the use of micro organisms may significantly affect the balance and biodiversity of the environment, such a wetlands.

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