

## Mineral resources: When blessing became a burden

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A derelict mining spot in Jos

Mineral exploration creates two categories of people: winners and losers. From the Niger Delta region to Jos to Zamfara State and other places where mineral mining takes place, while mining sponsors count their gain in millions of dollars, the inhabitants, who are the owners of the deposits, have nothing to count but their woes and their dead members. **Sulaimon Olanrewaju** reports.

THE Niger Delta region of Nigeria is not just the country's cash cow; it is also the nation's rotten egg. The area, from where crude oil, which accounts for about 90 per cent of the country's earnings, is drilled, is devastated; it is a perfect picture of deprivation. The Niger Delta is the shame of Nigeria.

The air of lack and deprivation is so thick in the area that it could be cut with a knife. Apart from its debilitating deficiency in basic amenities, the area has also been so hit by environmental degradation and pollution that living has become a journey to dying. The continuous pollution of the air as a result of gas flaring is said to be so bad it could lead to a reduction in the life expectancy of the people.

They have no safe water to drink and neither do they have good food to eat as a consequence of environmental pollution. Their means of livelihood has been taken away as a result of environmental degradation. The people, who are mainly farmers and fishermen, can no longer practise their vocations because of oil spillage. The aquatic life is gone; the ecosystem is destroyed, so the hosts of the nation's vast wealth have been reduced to hangers on, dependent on the goodwill of others for their subsistence.

Just a few places in the Niger Delta have a semblance of modernity with good roads, electricity, health facilities, potable water etc and these are the state capital cities, local government headquarters and a handful of other towns and villages. But in the towns and villages where oil is drilled, it is lamentation all the way.

In 2009, following an outrage about the extent of environmental devastation in Ogoniland, the Federal Government (FG) requested the United Nations Environment Protection (UNEP) to carry out an assessment of environmental contamination and threat to life in the area. Shell partnered with the FG for the exercise by agreeing to provide funding of up to \$9.2m. The result of the assessment was recently presented to President Goodluck Jonathan in Abuja. According to the report, "In at least 10 Ogoni communities, where drinking water is contaminated with high levels of hydrocarbons, public health is seriously threatened.

"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 Organisation guidelines.

"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."

It adds that, "The Ogoni community is exposed to hydrocarbons every day through multiple routes. While the impact of individual contaminated land sites tends to be localised, air pollution related to oil industry operations is all pervasive and affecting the quality of life of close to one million people."

The report then suggests that while clean up in the area could take five years through a combination of approaches, the restoration of heavily-impacted mangrove stands and swamplands might take up to 30 years.

But as it is in Ogoniland, nay most of the Niger Delta region, so it is in Jos, where tin exploration started in 1902; Anka and Bukkuyum local government areas in Zamfara State, where gold exploration is on and other places in the country where mining and exploration of minerals are taking place.

Large-scale mining of tin and associated minerals in Jos has resulted in a high degree of degradation of arable land, vegetation and landscape, as well as other environmental problems. A 1999 study by M.E. Adiuku Brown shows that tin

mining on the Jos Plateau has caused extensive man-made environmental damage, with vast tracks of pastoral land systematically destroyed in the quest for cassiterite and columbite, with increased radioactive waste as a result of dumping of mine tailings and several heaps of mine dumps and also mine ponds scattered all over the area. "These mine ponds have resulted in several deaths, with about 106 recorded from the years 1980 to 1993".

Similarly, according to a study carried out by James D. Gyang and Edefatano C. Ashano, entitled Effects of Mining on Water Quality and the Environment: A Case Study of Parts of the Jos Plateau, North Central Nigeria, published in the May 2010 edition of Pacific Journal of Science and Technology, "Twenty water samples from mine ponds, wells, and boreholes were collected and analyzed to evaluate for possible pollution arising from leakages.

A manganese value of 0.9 mg/l which is higher than the WHO (World Health Organisation) highest desirable level of 0.05 mg/l was recorded from a mine pond, while two other samples, also collected from mine ponds, showed chromium values of 0.1mg/l and 0.12mg/l, respectively, which exceeds the maximum admissible concentration of 0.005 mg/l."

Apart from subjecting their water to contamination, the activities of miners in Jos also affect the biodiversity of the area. To mine minerals, the earth's crust must be subjected to interference. The crust hosts animate things, whose life patterns are distorted as a consequence of mineral exploration and this results in a loss of biodiversity.

Experts say mines, both active and inactive, are potential water contamination sources because excavations create direct connection between ground water and the land surface. Gyang and Ashano say leaking of heavy metals is a threat to the environment, while drainage of materials from abandoned mines can act as ground water contamination source for years after mining operations have stopped.

The duo also submit that since the minerals exploited are commonly associated with a variety of others, which are not needed, they were simply thrown away or heaped within the tin shed as tailings. The abundant mine ponds, heaps of overburden and mine tailings are believed to have a negative impact on the environment in the sense that the mine ponds and pits are considered to be death traps, while the once flat earth surface has been defaced by heaps of overburden with gully erosion taking over in many places. The tailings could be a silent and unnoticeable time bomb, as they are replete with radioactive materials excessively enhanced through the mineral processing.

So, all that the dwellers of Jos have to show for all the millions of dollars that miners and their sponsors have made from their mineral exploration in their area over the years is the number of people that have died, the number of those dying as a result of contamination of the water the people drink, the poverty of the people, the gullies left behind by miners and their distorted ecological system.

The experience of Anka and Bukkuyum local government areas in Zamfara State is not different from that of the people of Jos. In June 2010, the world was alerted to the outbreak of lead poisoning which has since killed about 400 people, mainly children, in the two local government areas.

A WHO report on the incidence states, "At the request of the Nigerian Federal Ministry of Health, the United States Centers for Disease Control (US CDC) deployed a response team to assist in investigating this outbreak. At the same time, the Blacksmith Institute sent a team from TerraGraphics Environmental Engineering Inc to conduct an environmental assessment. These teams worked with the national and state authorities, MSF, and the country office of the World Health Organization (WHO). The investigations confirmed severe lead poisoning in more than 100 children in the villages of Dareta and Yargalma, with a mean blood lead concentration of 119 µg/dL (levels as low as 10 µg/dL are associated with impaired neurological development in young children). Moreover, lead concentrations in soil of more than 100,000 ppm were found in and around habitations in the villages (the limit for residential areas applied in the USA and France is 400 ppm)."

The report adds that at the behest of the Federal Government, WHO deployed a team comprising three epidemiologists, a clinical toxicologist, a paediatrician, an environmental health expert and a laboratory specialist. This team, working with staff from the State Ministry of Health, confirmed a high degree of environmental lead contamination from the same cause in five additional villages (Tungar-dadj, Abare, Duza and Sunke (Anka LGA), and Tungar-guru (Bukkuyum LGA)). "A random sample of 56 children under five years from the villages of Abare and Tungar-guru revealed that more than 90 per cent had blood lead concentrations above 45 µg/dL (for which chelation therapy is recommended) and more than 70 per cent had concentrations above 70 µg/dL (for which urgent treatment is needed)," the report said.

The report states also, "a high incidence of convulsions and death in young children has been noted in these villages,

and there is a strong likelihood that this is due to lead poisoning. An extrapolation from the above figures suggests that more than 2000 individuals are in need of chelation therapy in the five villages. Data from the State Ministry of Health hospital registry suggest there are still more villages where lead poisoning may be a problem.”

According to experts, apart from the communities losing some of their members, there are other long-term health problems which dwellers might encounter such as permanent learning and behavioural problems as well as brain damage.

There is also the problem of environmental degradation. With lead poisoning, the land is contaminated and it loses its nutrients, consequently, farm produce are destroyed. This leaves the people poor as they are unable to benefit from their investments in farming. Again, the trenches dug for these mining activities are abandoned after the mining is over. They, therefore, become death traps and easy entry points for devastating gully erosions.

According to Aigbedion, I and Iyayi, S. E, both of the Ambrose Alli University, Ekpoma, Edo State, in a paper on environmental effect of mineral exploitation in Nigeria, since much of the damage is inevitable if the minerals must be developed, both the government and the mineral industry must be involved in taking precautionary and remedial measures that can minimize the ill-effects of mineral development. Emphasis should shift from waste disposal to waste minimization through sorting, recycling of reagents and water. While the government should provide the regulatory legislation with appropriate sanctions, the mineral-producing companies are expected to carry out mandatory precautions, remedies or compensation for the damage done.

Speaking in a similar vein, Mallam Yusuf Balla of Friends of the Earth, a non-governmental organisation, said the way out of the health and environmental problems posed by mineral exploration is hinged on vigilance on the part of the government and the people.

“In most cases, the explorers just take advantage of inadequate regulatory system prevalent in our country to visit pains, poverty and death on the people,” Balla said.

He suggested that the issue of minerals being on the exclusive list should be modified to allow state and local to have a say in the matter since they are closer to the communities affected by the activities of miners.

“Many of the illegal miners claim to have gotten their permission from Abuja, but there is no way the local people can verify the claim. So, they go ahead with their illegal operations and leave a trail of sorrow and death. But if the state and local governments are allowed a say in the matter, it will be easier to check whether a miner is genuine or not,” the environmental activist said.

He pointed out that it was difficult to track down those involved in environmental degradation as a result of their mining activities because they were not properly registered with the appropriate authorities.

He intoned, “If God has given us minerals, we have to mine them but our focus should not just be the money we make from the minerals without giving thoughts to how the activity will affect the people of the neighbourhood. It is our responsibility as a people to ensure that we encourage best practices in exploration and monitor the explorers to get the best for the country and the people who were originally blessed with the minerals. We should ensure that they clean up the environment and take all the necessary precautions that will prevent death and environmental degradation. Even after doing all these, there should be a clause in the agreement that will make it mandatory for the explorers to take responsibility for every harm that comes to a community as a result of their exploration of minerals in a particular community.”