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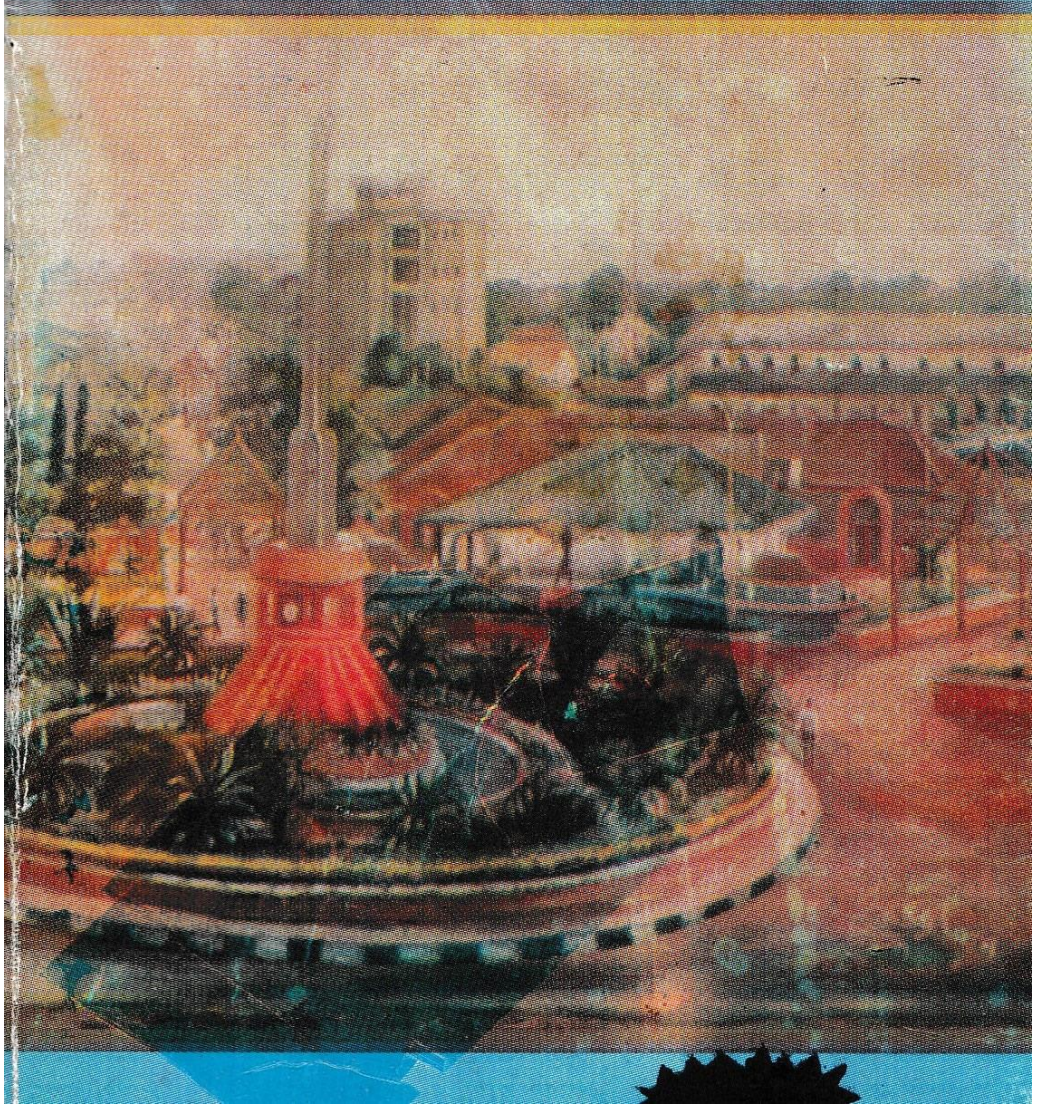
ISSUES ON CONTEMPORARY ENVIRONMENTAL CHALLENGES



ENVIRONMENTAL DEGRADATION IN THE EASTERN STATES OF NIGERIA: SITUATION REPORT

E. M. Ossom[1]
Faculty of Agriculture, University of Swaziland, P. O. Luyengo, Luyengo M205, Swaziland.

Clement E. Ekong
Department of Fine and Industrial Arts, University of Uyo, Uyo, Akwa Ibom State, Nigeria.

E. B. Usoro
Department of Vocational Education, University of Uyo, Uyo, Akwa Ibom State, Nigeria.

ABSTRACT
This paper introduces the reader to some of the recent advances in the world of science. It points out the fact that while scientists in other disciplines are moving ahead with important discoveries, not much advance has been made in the areas of environmental upgrading. In Nigeria, it appears that the society is allowing land, water and atmospheric pollution to overwhelm us. The indiscriminate environmental destruction in the eastern states of Nigeria is highlighted. Three towns and one village are singled out, and the observed details of soil degradation are described. The present generation is advised to act now before an irreplaceable environment is lost forever. The paper ends with suggested solutions to the enumerated environmental degradation, with a plea to the government to save the environment and the people of the eastern states of Nigeria.

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[1]*Corresponding author: emossom@agric.uniswa.sz.*
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INTRODUCTION
In the 20th and 21st centuries, big strides were, and are being made in the application of scientific knowledge to solve various aspects of human problems, especially in medicine, engineering, electronics and agriculture. In human medicine, in 1978, the first "test tube baby", Louise Brown, was born (Campbell, 2004). In February 2004, the

world woke up to the announcement that through genetic engineering, the first human clone, a healthy baby girl dubbed "Eve" (Anon., 2004a; Anon., 2000c) was born. The engineering feats of modern suspension bridges, "bullet trains", supersonic transport and military jets, attest to the contribution of engineers to modern life. Chemical and biological weapons, computers and other electronic gadgets have revolutionized how wars are fought and won, business and communication, or have been applied in engineering and medicine to study human and animal internal organs. By the closing years of the 20th century, a team of surgeons located in three different continents could simultaneously examine the internal organs of one patient. One of them, in physical contact with that patient would actually carry out the delicate operation with advice, assistance, direction and supervision of colleagues all linked together by satellite network and television screen-like, computer monitors.

In agriculture the birth of the first cloned mammal, 'Dolly' the sheep, on 5 July 1996, in Roslin Institute, Scotland (Anon., 2004a) signaled the first shot that agriculturists had joined the modern war of genetic engineering and species manipulation. Though Dolly died young (age; six years) in 2003, its birth had established that it was possible to produce a mammalian clone (Anon., 2004b). In April 2003, South African researchers with their Dutch counterparts, joined the clone bandwagon by producing a cloned, Champion milk-producer, a cow, named 'Futi' – the Zulu word for "replica" (Carnell, 2003).

Through further research, it was possible to incorporate genes of fish into tomato. The genetically altered tomato which had a fish gene inserted into it raised, apart from safety and labeling issues, the philosophical question as to whether this made the engineered tomato ethically unsuitable for vegetarians (Goldman, 2004). Genetically modified organisms (GMOs) such as the "fish-tomato", genetically modified "Bt cotton", maize, potatoes, and a host of other plants, have mushroomed in the past few years, giving rise to plants that can grow fast and reach market weight in the shorter time than their unimproved counterparts. Bt crop varieties, for example, express a natural insecticide that organic farmers have sprayed on their crops for many decades. Rather than using inefficient spraying, the plant is armed against its specific insect pests – for example, in maize, the

corn-borer, which leads to infestation by fungal pathogens that produce mycotoxins (AGBIOVIEW, 2004). Meanwhile, genetically modified (GM) crops designed for herbicide resistance can be sprayed with a safe biodegradable herbicide. Less spraying is required, again reducing equipment and labour inputs. Another benefit is that agricultural land does not require such extensive tilling, which reduces soil erosion. Soil scientists discovered perlite and vermiculite that have now been used for many years to amend professional potting soils made from peat moss (called "soilless" mixes or artificial soils because they literally contain no soil). They also have been used in outdoor plantings, for gardens, as well as in greenhouse (George and Abraham, 1979; The Schundler Company, 2004).

However, despite all attempts of scientists over the years, it has not been possible to create a human or animal life through any scientific methods. Neither has real soil been created. Indeed, some reverend gentlemen have wisely warned that God did complete the creation of the earth, but it is now left in the hands of human beings to conserve or destroy the earth. In West Africa, the soil or land is held in high esteem. The Efiks and Ibibios of Cross River State and Akwa Ibom State, respectively, have a saying that as humans eat, they should give to the soil because the soil is a brother to man. From the agricultural point of view, this appears to be the basis of the farming practice of returning to the soil inedible plant parts that help to replenish and reinvigorate the soil. Among some ethnic groups in Northern Nigeria, in the old days, land was not subject to sale, but was looked after and passed on from one generation to another. The people of such ethnic groups believe that they came into the world to see the land; they did not create it, and would leave it behind when they pass on. For such reasons, they stressed, land should not be sold, but carefully looked after for the future generations (Oluwasanmi, 1966). In other words, they preached and practiced environmental conservation.

Borrowing a leaf from these environment-preservation philosophies of these Nigerian ethnic groups, the authors of this paper now raise a voice of concern to alert various communities of the potential risk

that environmental degradation poses to the future generation. The eastern states of Nigeria are the main focus of attention.

2.0 TYPES OF ENVIRONMENTAL DEGRADATION

The major types of environmental degradation highlighted in this paper include soil erosion, plastic waste littering, poor drainage, water and atmospheric pollution.

2.1 Soil Erosion

In simple terms, erosion is the removal or wearing away of the soil surface through the actions of such agents as water, wind or ice. (Ossom, 1997). In the eastern states of Nigeria, the major cause of erosion is water through heavy rains. Wind and ice do not usually constitute erosion hazard in eastern Nigeria. For water erosion to take place, three separate, but related activities must take place: (1) There must be a raindrop or splash that hits the soil particles. (2) The particles must be detached from one another and (3) The detached particles must be moved away from one place to another and taken to another location. These three activities must all take place before erosion can occur; if only one or two of the activities take place, erosion may not occur. In general terms halting erosion consists of implementing various procedures that ensure that one or more of the above-named three activities would be stopped from taking place. The most devastating sites of soil erosion in the eastern states of Nigeria are found around the vicinities of these towns; Owerri, Onitsha, Enugu, Uyo, Oron, Calabar and Port Harcourt.

2.2 Erosion in coastal areas

Among the coastal towns that are most affected by erosion are Calabar (4°57'N, 8°18'E), Oron (4°48'N, 8°14'E), Onitsha (6°08'N, 6°46'E) and Port Harcourt (4°47'N, 7°00E). [All geographical coordinates cited in this paper were obtained from Microsoft Encarta interactive World Atlas, 2001]. Because these towns are in a high rainfall, equatorial forest zone, and do not have a uniformly flat terrain, it is common to see many rills and gullies along the slopes of the hill. A rill is a narrow but deep channel caused by running water washing away land (Ossom, 1997). When more running water passes through the rills, the gaps are widened and deepened, and a gully develops. A gully is a narrow, ditch-like, deep channel cut by rainwater; gullies are wider and deeper than rills.

Because most of the towns named above do not have large farming areas, the threat of erosion within the towns is not so much on prime agricultural land as it is on buildings, including residential and commercial houses and national monuments. In Oron for example, the main building of the National museum is badly threatened by seawater, as it is sited at the banks of the Cross River. Methodist Boy's high School (MBHS) Oron, one of Nigeria's Prestigious High Schools, faces a constant threat from erosion. Founded in 1905, the school might one day lose its small but revered chapel, as well as the former Principal's house (that once doubled as the first Principal's residence and chemistry laboratory). The landing jetty at the school beach and the original lighthouse had long ago, been swallowed up by sea. It is to be noted that in the case of MBHS, the size of the erosion-caused structure is beyond being described as a gully. A ravine has now been formed. The most dangerous form of soil erosion is ravine erosion (Anon., 2004f) that usually occurs when large volumes of water empty into a gully, thus widening and deepening the gully. A ravine has been formed to the eastern part of the chapel and former Principal's house. Rainwater collected from fields, streets, and drainage channels discharges into the ravine. The amount of flow from a major storm can be tremendous, pouring large volumes into a ravine at high velocity (Anon., 2004d). High amounts of rainfall, unstable soil and storms are main contributors to ravine erosion. Other areas in Oron where erosion has done irreparable damage include the beach of the former Custom and excise Department house and the "Esuk Oron" market area. Port Harcourt, capital of Rivers State, is the most populous town (over 500,000) in the eastern states. It is an "oil town", boasting of a petroleum refinery and several oil wells in the surroundings. Erosion has devastated several areas of Port Harcourt including the popular Abonnema wharf. In Onitsha, the River Niger has threatened to demolish several homes sited along the riverbank. The head-bridge of the national monument, the Niger Bridge (Onitsha end) is under constant threat from water erosion. Luckily, repair (with concrete reinforcement) to the damage suffered by the bridge during the Biafra-Nigeria war (1967-1970) resulted in water erosion being checked as well.

2.3 Erosion in inland Towns

Between the towns of Owerri and Onitsha, it is a common sight to see farmlands and prime economic trees lost to erosion. Such economic trees include oil palm *(Elaeis guineensis jacq.)*, raffia palm *(Raphia hookeri)* and cashew nut *(Anacardium occidentale)* trees. Newly constructed motorways get eroded fast on the hillsides, with the result that sometimes, gullies obstruct movement of vehicular traffic on the highways. Dwellers and car drivers around the hill-town of Enugu (6°27'N, 7°29'E) can testify to the hardship and headache that erosion has caused them over the years, despite government efforts to remedy the treacherous hills of Enugu.

2.4 Inland towns of Akwa Ibom State

Among the inland locations that face soil erosion in Akwa Ibom State are Uyo, Abak, Ikono, Ibiono, Ikot Ekpene, and Ikot Ubo-Ubium. Uyo, the capital of Akwa Ibom State has the notoriety and heavy burden of being saddled with a massive ravine that threatens the physical existence of such institutions as the Catholic Church-owned Cornelia Cornelly Secondary School, Uyo Federal Prisons, the University of Uyo, many other public and private buildings located along some streets in Uyo are also under real or potential threat by the ravine. Such streets include Eka Street, Asutan end, Old Stadium end off Wellington Bassey Way. So serious is the ravine threat in Uyo that a head of state in the company of the Akwa Ibom State Governor, once visited and inspected the ravine menace from the safety of a helicopter. It appears that some belated erosion-control measures have been taken to combat the menace of the ravine in Uyo. However, each rainy season, the forces of nature keep winning the erosion war while Government officials and contractors look on helplessly as the ravine lays claims to a wider territory.

As one drives from Uyo (5° 00'N, 7° 51' E) towards Ikot Ekpene (5° 11'N, 7° 42'E) a new ravine would be seen on the right-hand side of the road. The site is located just after the former Technical College, Ikot Adaidem, in Ibiono Ibom. This ravine is probably newer and less extensive than the Uyo ravine, and has only been brought to the attention of the authorities in the past two or three years. However, it has claimed some valuable farmland further away from the main road, and its western border has chipped into the side of the Uyo/

Ikot Ekpene highway. It is clear that Government officials are aware of the situation as evident by the warning signs posted to warn motorists on the danger at the ravine site. At Nung Udoe Itak, erosion has displaced the inhabitants of the buildings just after Immaculate Conception Secondary School. The road linking Itak and St. Theresa's Hospital Use Abat, Ibiono Ibom is a death-trap and is wearing *ayei*, an Ibibio traditional warning sign. Parts of the newly constructed school fence is also currently under serious erosion threats. By the time of writing this paper, no visible, permanent and effective steps have been taken to permanently halt the advance of this ravine, except a seeming seriously concerned Governor, Victor Attah trying to fight the bull with a million horns with bare hands. Lets hope the call on the Federal Government Assistance to help check it in the State at the Gala night at Ibom Hall on 7th August 2004 will be fruitful. President Olusegun Obansajo who went to visit the erosion site at Nung Udoe Itak in Ikono Local Government Area promised to do something in the next six months from the date of pronouncement. The question is how sweet the promises and visions but how long will the visions materialize. Policies which are made if bureaucracy will permit action then our society will be sweet to live in.

Abak (4° 58'N, 7° 46'E) is badly threatened by erosion on the hillsides and along all roads that lead to the small town. Buildings, bridges and valuable oil-palm trees are under threat. It is true to say that where human activities of farming, road and building constructions have not destroyed the natural vegetation, Abak is, truly, a forest of oil-palms; it has the highest density of oil-palm trees in West Africa (Hartley, 1988). This natural resource is threatened by extinction via soil erosion. Based on an array of international accepted criteria, agriculturists world-wide believe that West Africa is the center of origin of the oil-palm tree (Hartley, 1988). In simple language, this means that the oil palm originated form West Africa. For those who have traveled widely, it is possible to narrow the center of origin of the oil palm from West Africa to a specific location, Abak. As a matter of fact, Abak has a naturally conducive environment (soil type and climate, including the amount and distribution of rainfall) for oil-palm growth. Abak has a great diversity of genetic types of oil-palm, and high density of the trees per hectare. These were among the strong scientific reasons that made the now defunct West African

Institute For Oil-Palm Research (WAIFOR) want to establish the main station of an oil-palm research institute at Abak. But the local chiefs who controlled land had other ideas. Probably, out of suspicion for the white man's unpredictable intentions, and fear of the unknown future, they declined the request, responding that they had no available land for such an agricultural institution. WAIFOR was discouraged and moved over to Benin City, where it eventually established the main station of present-day Nigeria Institute For Oil-Palm Research (NIGOR). Apparently, a change of heart from Abak chiefs later took place, but it was too late. Today, only a sub-station of NIFOR is sited at Abak, but the main stations is in Benin City. Improved and high-yielding varieties of oil-palm are now commercially grown in several plantations in Malaysia and the Philippines that have now greatly surpassed Nigeria in palm oil production. The valuable agricultural soils of Abak need to be saved from erosion in order for the center of origin of the oil-palm to be preserved for posterity.

Abak is not the only inland location in Akwa Ibom Stat that is badly threatened by erosion. The village of Ikot Ubo, Ubium (4° 43'E, 8°01'E) is currently facing massive erosion problems. Farmlands are not yet as threatened as the roads in the village. Most devastated area are the 1.5 km road leading to Ikot Ubo Community Secondary School, the road leading from the Community Secondary School to the bridge border with the village of Ibedu (4° 44'N, 8°02'E). Also ravaged by erosion are the streets leading to 'Otung Okono', 'Otung Owoedimo' ('Owo-umo'), 'Usung Etok Idim Akpa-ita', the Government-neglected Barracks/ 'Esion Ndak Oto' road (that was once a sealed road), and the 'Ndak Ukana'/ 'Udua Ntakrok' road. On these roads are found potholes, rills and gullies of various sizes. If steps are not taken now to halt the erosion in this village, a time may come when the untarred streets would be no more motorable, and may even be difficult to walk at night.

While most parts of Ikot Ubo suffer from the denudation (removal of soil particles by rainwater), two streets seem to be the repository for much of the transported particles of soil. The trained eye would observe that when it rains in Ikot Ubo, sand particles are carried in the rainwater from 'Esion Asan' via Qua Iboe Church Avenue. At

the T-junction where Qua Iboe Church Avenue joins the Mission Road and Ntekim Street begins, the rainwater flows eastwards along Ntekim Street. The coarse and fine sands are deposited along Ntekim Street before 'Esion Ikot Nkebek' where is sited the town hall and village waterworks. The thickness of the sandy deposit (4-7 cm in parts) has resulted in several bicycles, motor cycles and a few cars being trapped in the sands from time to time, especially in the dry season when the sands easily part and allow slow-moving, narrow wheels to sink. While those who mould cement blocks or plaster walls of houses find these sands a cheap source of supply, the sources of origin of the sand particles have irretrievably lost valuable soil. From Ikot Nkebek town hall, the water, carried all the way from 'Esoin Asan' but now devoid of most of the sands that it had been carrying, passes through to 'Otung Owo-umo' whose street has now developed gullies. Further from 'Otung Owo-umo', the water (now carrying some more sand particles) flows to join another body of water at a T-junction from where the sand-laden water now flows in a south-westerly direction along 'Otung Edem-Enang'. Here, a thicker (5-10 cm) sandy deposit is left. It should be noted that soil erosion does take place too along streets in 'ukprak', 'Usung Uduang Ekiko', 'Ebine', and along 'Usung Idim Esa' of Ndak Ukana. In all these cases, rills and gullies are formed, and it is a matter of time before the road become impassable, unless erosion control measure are adopted immediately.

Stagnant Water

In the rainy season, it is common to find stagnant water, up to 15-20 cm deep, permanently obstructing or slowing down traffic along Uyo/Ikot Ekpene Road, just before Total Petrol station, as one drives towards Ikot Ekpene. This stagnant water is a permanent feature of Uyo/Ikot Ekpene Road every rainy season. Stagnant water is also found at Nwagha (Nwaniba) Road just after St. Luke's hospital, Anua. During raining season pupils of Primary School Eniong Offot and Primary School Anua Offot are always on forced holidays as they cannot contend with the leach infested stagnant water in the respective school premises. The points where Obio Imo and Uruan Street meet Oron Road is another water log that poses serious problems to road users when ever it rains in Uyo. Government officials certainly see these. Proper drainage and clearing of drains

during the dry season would help to solve this problem. Poor aeration for plants that grow by the roadside often leads to their death.

Though the commercial town of Aba (5°06'N, 7°21'E) is not a coastal town, it does have problems of erosion that threaten both residential and commercial buildings because of the river that runs through Aba. However, there is another aspect to environmental degradation in Aba. Araria market where a huge volume of both wholesale and retail trade takes place, is located in Aba. Araria market has the highest concentration of the richest merchants of eastern Nigeria. Their various wares depend on the financial muscle of each merchant, but include textile, English suits, traditional garments, shoes, white goods, furniture, plumbing equipment, interior-decoration materials, computers, cars and car parts, carpets and rugs, generators, building materials and any used goods (known as 'second new' "turkunbo" "Belgium" in Nigerian retail trade parlance). An assortment of plastic ware, ceramics, kitchenware, electrical and electronic equipment is also sold in Araria market.

Despite the huge amounts of money that change hands in Araria market by the minute, sanitation facilities around the market are very deplorable. It is an environmental nightmare. The slimy water that is found in the smelly, open gutters would be a gold mine of study/ research material for research biologists. However, the business tycoons and their eager customers hardly notice the poor sanitation in this market. Someone had joked that in the good old days when Nigeria had Sanitary Inspectors, environmental health was excellent, but now that the country had Health Inspectors, sanitary conditions are the worst ever.

Industrial Pollution

It is not only water erosion that has degraded soil and farmlands in eastern Nigeria. The towns of Port Harcourt, Calabar, Nkalagu (6°28'N, 7°45'E) and Oron have experienced pollution from industries over the years. Incidentally, some of the industries have since shut down, for financial reasons, and not because of any environmental issues. Among the ill-fated industries were the asbestos-producing factory at Oron, and cement-producing factories in Calabar and Nkalagu. The term "asbestos" is not a mineralogical definition but a

commercial name given to a group of minerals that possess high tensile strength, flexibility, resistance to chemical and thermal degradation, and electrical resistance. These minerals have been used in many products, including insulation and fireproofing materials, automotive brakes and textile products, and cement and wallboard materials (Anon., 2004h). Asbestos is a substance that is banned in many countries but not in Nigeria. It is known to be a hazardous substance that causes a number of diseases in asbestos workers and laboratory animals. Even the use of asbestos roofing sheets, water pipes, ceiling boards is dangerous and unhealthy. As asbestos fibres accumulate in the lungs, several types of diseases may occur. Three of these are: asbestosis (scarring of the lung tissue); mesothelioma (cancer of the pleural lining); and lung cancer (a malignant growth or tumour of the bronchial covering, often obstructing air passages). The time between exposure to asbestos and the occurrence of lung cancer is 20 to 30 years. People who smoke might have their asbestos-caused diseases become more severe (Anon., 2004g). Nigeria workers in the asbestos and cement factories might have been exposed to health dangers without knowing and without any adequate compensation.

The oil-producing companies and the petroleum refinery generate the heaviest pollutants in the River State Area. Activities of the oil companies lead to environmental degradation of farmlands, waterways and fishing ports wherever there is any of the frequent oil spills that in Nigeria attract little or no compensation from the culprit companies. The continuous flaring of gas in oil wells and the various fumes from the petroleum refineries constitute massive environmental pollution that degrades, not only the environment in the Ogoni, Eleme and Port Harcourt areas, but far beyond the borders of Rivers State. It is akin to the situation where oil-producing activities by an oil company in the Afaha Eket (4°38′N, 7°54′E) and Ibeno (about 4°34′N, 7°57′E) areas appear to have adverse effects in villages far remote from the oil-producing areas. It is believed that the oil-producing activities around Eket are responsible for the rapid rusting of iron sheets on roofs as acid rain appears to be a feature in the Eket, Ibeno and as far away places as Akai-Ubiom (4°42′N, 8°01′E). Such rapid rusting and crumpling of iron sheets were not commonly

experienced in the area before the era of oil production in Ibeno area (Udoh, T. S., Teaching Service Training Centre, Uyo, Personal Communications, 1999).

Improper refuse disposal seems to be the order of the day in Nigeria. Along Aba/Port Harcourt expressway, trash is heaped beside the highway. Later, when some officials are satisfied that the stench is powerful enough to make some weak-hearted passers-by to faint, a tractor is used to disperse level the mountain of smelling trash. It is not only in Aba that this takes place. Dumping of refuse by roadsides appears to be the handiwork of government-hired contractors. After dumping the trash in one wring place, another contract would, probably, be awarded to remove the trash and dump it elsewhere. The use of tippers that scatter refuse on the highway does not help maintain a clean environment.

The Menace of Plastics

One of the smaller industries that have arisen form the huge petroleum industry in Nigeria is the plastics industry in which various factories churn out millions of plastic bags, foam for cushion chairs and mattresses, plastic sheets, plastic tents and fluid containers of all shapes and descriptions. Even in the most remote village of Nigeria, plastic bags are in common use for shopping or wrapping different materials. These bags not only feature as shopping bags, but also feature in some unorthodox roles as shower-caps, headgear in the rainy season, and even as emergency containers for small quantities of vegetable oil. Plastic materials form a primary and ubiquitous environmental aesthetic shame in the Nigeria community. In the water-filled, open gutters of the streets are found plastic bags, and other plastic containers of all sizes and colours. Despite several years of the "Environmental Sanitation" exercise that was compulsorily carried out every last Saturday of the month, it is still common to observe hundreds of bits of plastic materials sticking out of our unpaved sidewalks. Some plastic bags permanently hang on trees, power and telephone lines like tattered flags of unknown nationalities. Probably, because these bits of plastics that protrude from the soil along the streets, or that hang on lines, do not stink like excrement, no one seems to regard them as environmental pollutants and an

eyesore. It is interesting to observe that even though gutters are cleared on sanitation parades, the heaps become either road bumps or remain to be wash back into the same gutter by the advent of the rains. What a myopic vision and futile mission.

Along river banks, it is common to observe several of the following types of junk floating on the water: plastic bags, plastic bottles, plastic bottle covers, pieces of plastic pipe, punctured footballs, ropes, balloons, and toys, to mention a few. These are usually floating on the river, or might have been washed ashore from wherever they were indiscriminately thrown into the water from motor craft, canoes and shoreline houses. It is true that it is not only in Nigeria the plastics are a menace, but the Nigerian situation is beyond proportion compared to that in any other part of the modern world. In 1991, during a beach cleanup, a scientist in the United States recorded over 950 pieces of trash in a 2.4-km stretch of beach. He compiled an interesting inventory made up of 35 different classes of trash that included buoys, plastic and glass bottles from 15 different countries, and food drink cans (Smithsonian institution, 1995). Trash can kill. When odds and ends of life on land – particularly plastics-end up in the sea, they pose hazards to marine life. Animals drown or strangle from getting tangled in discarded or lost fishing gear. They may even die from eating plastic and other garbage. Biologists who performed an autopsy on an emaciated male sperm whale beached at Sea Side Heights, New Jersey (U.S.A), found a party balloon, ribbon still attached, blocking the animal's digestive tract (Anon., 2004e). Plastic negatively affects wildlife in a number of ways. Some animals, mistaking plastic for food, eat it. For example, approximately 15 percent of the world's 280 species of sea birds are known to have eaten plastic in the form of pellets, bits of Styrofoam, even plastic toy soldiers. In addition, sea turtles, apparently mistaking plastic bags for jellyfish upon which they regularly feed, have been found with balls of plastic in their stomachs (Anon., 2004e). In looking inward one cannot help but observe goats swallowing plastic bags used in wrapping salts only to end up with "eternal pregnancies" without delivery. Ignorance of plastic devastation in case of these goats have often ended up in witchcraft accusation on goats. What a self mental degradation?

The Way Forward

On 19 October 1992, the Federal Military Government of Nigeria established the Oil Mineral-Producing Areas Development Commission (OMPADEC) by decree No. 23 of 1992 (Mbeke-Ekanem, 2000). The Commission was charged with the responsibility of developing and rehabilitating the environment and peoples of the oil-producing areas. With the establishment of the Environmental Control and Pollution Directorate, interstate pollution was expected to be controlled. Government propaganda also had it that Agriculture, Fisheries, business and commercial transaction Directorates, in collaboration with banks, would provide agricultural inputs and implements to farmers, and loans to small-scale traders and small-scale and medium-scale industrialists (Mbeke-Ekanem, 2000). It is not the objective of this paper to judge the now-defunct OMPADEC. However, one cannot fail to observe that the environmental problems of the oil-producing areas as well as those of non-oil-producing areas are in a worse state before the birth, and after the death, of OMPADEC. The situation has deteriorated to such an extent that the hitherto peaceful people of the areas have now resorted to active militancy and hostage taking as their new weapons. This seems to be an effort to draw attention to, and possibly extract compensation from, those responsible for the environmental degradation of their farmlands, waterways and fishing areas. The setting up of OMPADEC was a step in the right direction. Would a similar Commission with a better modus operandi serve the oil-producing areas better? Would the Niger Delta Development Commission (NDDC) have agenda that has objectives and realities in education, conserving, cleaning and constructing a better and more friendly environment?

It is clear that in the case of oil pollution, Government (Federal, State, Local) has to play a leading role in negotiating or forcing recalcitrant oil companies to help solve man-made environmental degradation. This is, certainly, government business because the oil companies thrive with the active blessings from, and benefits to, the Government. When an oil spill occurs along a coastline in fishing ports or other places, it affects the human population as well as plant and animal life. Emergency equipment and personnel must be rushed to the

scene. The culprit company must be identified in order to determine who will pay for the cleanup. Usually the cleanup is a group effort by oil companies, government agencies, local groups, and volunteers. In countries where wildlife is held in high esteem (we hesitate to include Nigeria in this category), people rescue and clean birds and animals, and painstakingly scrub the oil from the rocky shores with brushes and detergent. Oil that cannot be skimmed is emulsified-that is, droplets of oil are scattered into tiny particles that will then float away and disperse out to sea. Genetic engineers have developed oil-eating bacteria that are used to ingest the oil, to clean up the environment after the crews and volunteers have left. The experience gained from several well-publicized oil spills has ushered in an era of greater understanding and international co-operation with regard to containing spills and avoiding environmental disasters that affect our global ocean. One bright spot of news is that ecologists revisiting oil spill sites have found marine population recovery better than they have predicted (Smithsonian Institution, 2004). Even though the sea is supposed to be capable of cleaning itself, the sewage, polythene, oil, and solid wastes can be identified as sources of blockage of these polluted material from getting to the outer ocean for these theories to be effected.

Other Solutions to environmental Degradation

Where soil erosion is caused by water, the sooner solutions are put in place, the better things would turn out to be. Such solutions include the planting of appropriate grass species to cover the soil and reduce raindrop impact. The building and consolidating of anti-erosion bunds across roads, making of planting ridges across farm slopes (and NEVER along the slopes), and provision of appropriate drainage channels for water are recommended. Where seashores and water bring in a lot of trash, regular cleanups should be organized on a regular basis. Cleanups (called Cleanathons) are regular features in countries that seriously combat environmental degradation. Throwing trash out of cars attracts a fine of $100.00 in the United States, but there is no such fine in most African countries.

The list below might help individuals, groups and Governments to keep and maintain a clean environment:

- Use leaves, kitchen scraps and other organic waste to make compost.
- Recycle leaves by using them as mulch in the gardens.
- Properly dispose of waste that you cannot avoid or recycle.
- Government should dispose of community trash in a proper manner (like using a sanitary landfill) but should not dispose of waste by roadsides.
- Use of incinerator though could be argued to bring about air pollution, can certainly reduce plastic nuisance in soils, water and gutters. It is note worthy that combustion engineers can recycle the smoke to carbonize products from sooth for paints and polish industries.
- Clean drains in the dry season before the rains fill them up.
- Government should provide waste disposal trucks and regularly dispose of rubbish; after all, people pay their taxes, including refuse disposal fees.
- Mechanics, car repair companies, filling stations, and other users and producers of oil- waste, should not be allowed to dump them indiscriminately.
- An encouraging way is the "buy the trash for recycling venture" that can be set up by the companies that produce and use these plastics or other kinds of trash.

CONCLUSION AND RECOMMENDATIONS

There is a lot of environmental degradation taking place in the eastern states of Nigeria. If the present generation wishes to pass on to the next generation water and air that are pollution – free, and land that is fertile enough for agricultural and other uses, the time is now to implement the suggested steps to remedy the situation. Government has a major role to play in this matter. It is not sufficient to tax oil companies. They should be made to clean up after the oil spills that they cause and also pay adequate compensation to the people whose lands; water and fishing areas are forever ruined. Government should take steps now, not only to save the environment, but the people in them as well.

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