

# The Effects Of Community Participation And Funding On Environmental Pollution Control In Nigeria

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*Abstract: The aim of this study was to appraise the effects of community participation and funding on environmental pollution control in Nigeria. The study considered concepts of environmental pollution, environmental sustainability, methods of community participation, methods of funding and their effects on environmental pollution control. It concluded that The study revealed that Sustainable Environmental Pollution Management is yet to be achieved in Nigeria. This is because government is yet to regard Environmental Management as a priority and also, due to lack of fund. The environmental problems in Nigeria are acute, pervasive and increase rapidly. This should be a source of great and justifiable concern for all today. The effect of pollution on air, aquatic or water and on land has adverse impacts on health and economic activities. The increasing population pressure, the decline levels of water tables and more airborne and water-borne pollution from industries and domestic waste. Underpinning all these problems are poor management capabilities and corruption which hinder effective government policies. Allied to these is the fact that in Nigeria the environment has so far not been seen as an important matter by the politicians, companies and individuals. It recommended that environmental protection techniques need to be cultured, home-grown and the framework should be "bottom-up". It should be community based. The framework should be organized at the village or community level. A number of communities should be grouped together from the (political) Ward level to Local Government level. Environmental protection agencies at the local government level should be empowered to punish offenders. The environmental protection officers should be fluent in the local language(s) of the area of their jurisdiction.*

## I. INTRODUCTION

Environment can be viewed as all physical, non-physical, external, living and non-living situations surrounding an organism that determine its existence, development and survival at a particular time. It encompasses constantly interacting sets of physical (natural and man-made) elements and non-physical, living and non-living (e.g. social, cultural, religious, political, economic) systems, which determine the characteristic features, growth and sustainability of both the component elements of the environment and the environment itself (Johnson, 1992, Muoghalu, 2004). For instance, a sociologist, Bain (1973), defined environment as all the external and non-personal conditions and influences that determine the welfare of a people in a given area. On the other hand, a geographer, Hagget, defined environment as the sum

total of all conditions that surround man at any point on the earth's surface (Efobi, 1994).

The Oxford Advanced Learners Dictionary (Della, 1998) defines environment as condition, circumstances, influences etc., affecting people's lives. It is the complex of physical, chemical and biotic factors that act upon an organism or an ecological community and ultimately determines its form and survival. According to Environmental Impact Assessment Act of 1992, the environment is defined as: Land, water and air, including all layers of the atmosphere; All organic and inorganic matters and living organisms on, in and below the earth's crust.

However, these definitions do not include man's activities on earth. According to Udia, (2003) the environment is the sum total influence which modifies and determines the development of life and character. This embodies the entire

atmosphere and biosphere. The atmosphere is the layer of gases which envelops the earth, while the biosphere is a thin layer of solids, water and air, in which all lives exist. The built environment embodies all the land uses, associated infrastructure and recreational space which enhance the people's standard of living. This definition conforms to the Federal Environmental Protection Agency (FEPA) Act (1988), which sees the environment to "include water, air, land and all plants and human beings or animals living therein and the interrelationship which exist among these or any of them".

In the opinion of Omuojine (2005), the environment includes the ways in which the environmental media interacts with one another and the ways in which they interact with manmade environment and the fauna and flora which inhabit them. The environment should therefore be seen to cover the natural environment given by God for man's usage and the built environment designed and developed by man. However, the primordial aim of development in the environment is to improve the quality of life and enable people to realize their potentials and lead lives of dignity and fulfillment. Development is real only if it makes human lives better in all these respects. A development pattern that pays little or no regards to environmental issues is essentially a disaster right from the conceptual framework (Ivbijaro, 2007).

Sustainable development therefore, is the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Sustainable development is economic and social development that ensures that the environment is conserved to perform its various functions including the functions to humanity. It is development that is pro-people, pro-nature and pro-job (Ivbijaro et al, 2006). Environmental management on the other hand according to Uchegbu (1999) is the process of putting together those items of environmental nature where man exists so that man's penetration and exploitation do not have adverse effect on the environment. This is aimed at ensuring that the environment is free from abuse, and misuse that may result in pollution and degradation. It is aimed to promote development compatibility, balance urban land use value and upgrade the environment for present and future generation.

However, it is pertinent to note that sustainable environmental management can only be achieved through Environmental Sanitation. Environmental sanitation as defined by the National Environmental Sanitation Policy is the principle and practice of effecting healthful and hygienic condition in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment. Thus, environmental sustainability can be measured with sustainable development indices, which measure the quality of human life and the quality of the environment. These indices are Human Development Indices, which form the barometer for measuring change in human welfare. They cover the following three dimensions of human well-being, viz: Knowledge or educational attainment; Income and decent standard of living (as measured by the Gross Domestic Product (GDP) per capital in purchasing power (PPP) in US Dollars) and Health, ie living a long and healthy life (as measured by life expectancy at birth).

For a nation, state or local government areas or society to be environmentally sustainable, it has to consciously develop policies that deliberately promote and enable individuals to achieve a high quality of live in ways that do not impact or degrade the environment. Okueso & Adekoya (2006) advocate for Education of all concerned in the process of making environment more wholesome. Hence, sustainability in this context relates to the ability of the ecological, economic and socio-cultural systems in a manner that does not limit the possibility of meeting the present and future needs of the various components and aspects of the environment.

It can also be viewed as the carrying capacity of the supporting ecosystems (Marcus, 1998). Evidences suggest that the prevailing global environmental degradation poses serious threat to sustenance of capacity of the ecosystem. Therefore, environmental sustainability has taken priority position in housing, infrastructure provision, planning, land use and urban development among others (Marcus, 1998; Aribigbola, 2008). Urban areas are centres of arts, culture, education, entertainment, technological innovations and specialized services. The environment provides all life support systems with air, water and land as well as the materials for fulfilling all developmental aspirations of man. As in most other countries of the world, the Nigerian environment today presents a grim litany of woes. The unwise use of the natural environment due to ignorance, poverty, overpopulation and greed, amongst others, has led to the degradation of the environment. These negative impacts are referred to as environmental degradation, which implies "abuse of the environment" due to improper resources management.

In Nigeria, the environmental problems are characterized by soil erosion, high population pressure and increasing congestion in urban centres, which are further compounded by unplanned growth, and increasing problems of domestic and industrial wastes disposal and pollution. Human related activities since 1980s, especially in the development projects of the oil and gas sector, have led to the acceleration in the loss of the topsoil and deforestation, loss of habitat, species and biodiversity; and degradation of wetlands (NEST, 1992).

Environmental degradation has resulted in the deterioration of Nigeria's urban and rural environmental quality, which is characterized by water shortages and floods that play a major role in the transmission of communicable diseases. These worsen the condition of the poor. Also, drought and desertification threaten food security and nation's ecological integrity, and are drivers of population displacements (Nwafor, 2006). Nigerian population is more than 140 million with an average density of more than 120 persons per square kilometer. Although, this density may vary from one region to another, it is obvious that Nigeria is already experiencing high population density. The interaction of these millions of Nigerians with their respective environment has left indelible mark on the landscape. The manifestation of these impacts includes urbanization, deforestation, desertification, overpopulation and all kinds of pollution. These impacts of man's activities have both positive and negative effects on the natural environment. The multiplicity of the usage and concept of the term environment have resulted in a variety of adjectival forms which include social environment, molar environment, physical environment,

home environment, psychological environment, behavioural environment and geographical environment.

Agbola and Agbola (1997) and Areola (2001) clearly indicate that the spatial structure of Nigerian cities evolved before, during and after the colonial rule in the country made the introduction of modern infrastructural facilities very difficult and expensive, especially when dealing with areas having the bulk of ancestral homes of indigenous people. It is also opined by demographic experts that the high rate of urbanization put at 5.3 % in Nigeria, which is among the highest in the world, has the tendency of spurring up environmental degradation (Goldein, 1990). Closely related to this is the fact that most urban areas in Nigeria have grown beyond their environmental carrying capacities and existing infrastructure (National Population Commission, NPC, 1998). For instance, the 2006 Nigeria's national population census data (FRN, 2007) revealed that most of the urban areas in Nigeria with small land mass have their capacity to take further population increase already exhausted or extremely limited. With a population figure of more than 140 million and land mass of about 924, 000 km<sup>2</sup>, Current estimates indicate that 10% of the land areas accommodated 28% of the country's total population (Taylor, 2000).

The implication of this is that there is disequilibrium between the population and the environment, and this has adversely affected the carrying capacity of the urban areas in the country, hence the increasing poor quality of the living conditions and the low livability index of urban areas in Nigeria.

## II. ENVIRONMENTAL POLLUTION

Environmental pollution can be categorized into three groups. These are air or atmospheric pollution, aquatic or water pollution and land or surface area pollution. The World Health Organization (WHO, 1990) defined air pollution as "limited to situation in which the outer ambient atmosphere contains materials in concentrations which are harmful to man and his environment". Man's activity on the earth surface has largely degraded the quality of the lower atmosphere. The growth and Sustainable development of industries and urbanization have contributed greatly to the excess carbon monoxide produced by combustion and other human activities. Carbon monoxide reacts with the blood vessel and prevents it from taking up oxygen and the people are suffocated. In Nigeria, several rural towns that had in the past enjoyed fresh and dry air are currently experiencing air pollution problems due to industrialization process and expansion in human activities (Obajimi, 1998). Aquatic or water pollution is the discharge of unwanted biological, chemical and physical materials into water bodies from man's environment. The pollutants are usually chemical, physical and biological substances that affect the natural condition of water. This incidence is responsible for the wide spread water contamination in most Nigerian cities. Also, solid wastes have equally flooded the water ways in these urban centres.

Land surface pollution is the occurrence of unwanted materials or waste on land. The commonest pollutant on land is the waste products that are often scattered on land area in

the cities. According to Onwioduokit (1998), most environmental problems are due to the production or consumption of goods whose waste products translate easily into pollutant. It is believed that the emergence of urbanization is responsible for the rapid accumulation of solid waste. However, it would appear that the growth of urbanization and industrial development coupled with improper waste management control have added a great dimension to land area pollution in Nigeria. The environmental policy is the foundation of the environmental management system (EMS) through the provision of a framework for action and the setting of environmental objectives and targets. Maintaining the quality of the environment is of high priority in Nigeria. Commitment to safeguarding the environment and the prevention of pollution through effective implementation of environmental policies is crucial for the protection of the environment. According to Nwafor (2006), the generic process of project-level environmental impact assessment (EIA) was institutionalized in the United States (US) as a requirement of the country's National Environmental Policy Act of 1969 (NEPA), which was signed into law at the beginning of 1970. In the three and half decades of its existence, project-level EIA has evolved considerably in scope, tools, techniques and methodology.

However, the generic aspects which characterize all impact assessment work, such as public participation or involvement, screening and scoping, impact identification, prediction, monitoring and evaluation, have persisted. By the 1970s, the environmental movement that began in the 1960s had built up public awareness about the interactions between the environment and development. As a result, a tide was created which few elected office holders would dare to miss or oppose. First, President Richard Nixon responded to the movement in May, 1969, by establishing a President's Council on Environmental Quality (CEQ), with himself as Chairman, to implement environmental policy decisions. Then, the Congress, which would not accept to be outdone in this environmental enterprise, decided to set in motion the legislative machinery to make the relevant law.

Congress passed the National Environmental Policy Act (NEPA) to ensure that environmental concerns would be considered in all federal agency decisions which were in any way related to resource management. Oversight of this expansive mission was assigned by NEPA to the newly formed CEQ, which was to reside within the Executive Office of the President. With CEQ oversight, a regulatory infrastructure began to take shape after NEPA. Congress formed the U.S Environmental Protection Agency (EPA) and passed important legislation underlying the current US system of environmental laws.

The Federal Government Protection Agency (FEPA) Decree 58 was passed on 1988 in Nigeria. This was to work out rules on how to handle the environment. But, before this, there were other laws and acts of Government relating to environmental protection. These include the Mineral Act of 1969, 1973 and 1984, the Oil in Navigable Water Decree of 1968, Associated Gas Injection Act of 1969, and Chad Basin Development Act of 1973, to mention but a few (Schmidt, 2003). These Laws and/or Acts were promulgated to address specific and identified environmental problems. They were

narrow in scope and spatially restricted. Decree No. 58 of 1988, as amended by Decree 59 of 1992, which gave birth to FEPA (Now Ministry of Environment) empowers the agency to have control overall issues relating to Nigeria Environment, its resources, exploitation and management (Eneh & Agbazue, 2011). Despite the legal backing and funding, which FEPA enjoys from the Federal Government of Nigeria, the level of success so far recorded by FEPA is a far cry from her set objectives and goals. This is because the rate at which the environment is being degraded is growing worse than what it was before the establishment of FEPA.

For example, urbanization, deforestation, desertification, and pollution are now more remarkable than ever before. If appropriate techniques and technology of environmental protection and management are not put in place, Nigeria may become a difficult country to live in the next 15 years. FEPA, as an institution or agency, is foreign to the people of Nigeria. It is not indigenous. The concept or idea did not evolve from the people's tradition or way of life. FEPA is very far from the people and the environment. Its officials are like tax collectors of the olden days. As a development strategy, FEPA is "top-down" and not "bottom-up", which is more popular. For FEPA to succeed, certain basic ideas about environmental management have to be conceptualized. Before modernization came our people were tied too close to their environment. They have the technology of utilizing the resources within the environment, and protecting same from despoliation. In this regard the concept of FEPA should be community-based. In the

dissemination of modern and scientific methods of agriculture, the agency creates what is called "Agric cell". Agricultural officer attached to each cell goes to educate the people about modern methods of crop cultivation. In a similar vein, environmental protection officers should be sent to one or group of communities to enlighten them on modern methods and techniques of environmental protection. The framework, which should be community-based, will be organized at the following levels: Ward (a group of communities, or streets in the case of urban centres); At the Local Government level there should be some power to punish earring offenders; State level; and Federal level. Community participation is very important and where ever it is adapted, remarkable success has been achieved.

### III. CURBING ENVIRONMENTAL POLLUTION IN NIGERIA

#### A. COMMUNITY PARTICIPATION IN ENVIRONMENTAL MANAGEMENT

The essence of stressing community participation in environmental management is to foster higher level of involvement of the citizens in the quest for better living conditions. This is considered germane because it is not widely realized that cooperation of all is needed to upgrade the environment (UNCHS, 1994). Essentially, the objectives that community participation tends to achieve according to Milton and Thompson (1995) are to:

- ✓ Identify and prioritize the needs of the people;

- ✓ Mobilize resources for meeting the identified needs;
- ✓ Engender consultation, communication and collective capacity building;
- ✓ Create awareness about the role of key actors involved in local level development; and
- ✓ Foster mechanism for conflict resolution and consensus-building in a neighborhood.

It is apparent from the foregoing that the institution of participation approach to environmental management leads to a number of benefits. For instance, it increases access to decision making process; a considerable degree of empowerment, accountability and improved efficiency since community directed and managed projects are more cost effective. Furthermore, it reduces the tendency to corruption, increased willingness by resident to pay for environmental related services which on the long-run guarantees national development and sustainability.

The gains of community participation in environmental management, as asserted by Achor (2001) include:

- ✓ Engendering community cohesion, security and creative use of local resources;
- ✓ Providing an opportunity for communities to relate with public officials and donor agencies
- ✓ Providing avenue for conflict resolution and consensus building
- ✓ Fostering community empowerment, capacity and confidence building and self-reliance; and
- ✓ Giving residents an opportunity to take action and solve their collective problems.

#### B. ADEQUATE FUNDING

The problems of financing environmental protection lie mainly on the supply side. Adoption of an effective and sustainable financial system requires an intensive extensive exploration of available sources of fund. Several sources of environmental fund in Nigeria have not been explored. The possible sources of sustainable fund for environmental management in Nigeria according to Ogboi (2009) are discussed below:

- ✓ *FEDERAL GOVERNMENT BUDGETARY ALLOCATION*

Traditionally, government funds environmental programme through budgetary allocation. The financial expenditure of government on environmental management in semi-arid and sub-Saharan Africa has traditionally been highly limited, so reducing government budget and expenditure which have drastic impact (Abbott, 1993). Public finance can be categorized into capital investment from development budget and allocations from concurrent cost budget of institutions. A combination of both sources provides a better approach for improving the finance for environmental management. Mono channel budgetary allocation is less effective but it can be improved through diversification and combination of investment financing and recurrent cost expenditure. This requires proper planning and supply projection. In projecting financial need for environmental management, it is important that all levels of government

make adequate budgetary provisions. The new initiative on public finance is on how to support the increase in allocation with other public oriented strategies for mobilizing additional financial resources.

#### ✓ *FUND FROM STATES AND LOCAL GOVERNMENT AUTHORITIES*

States and local governments are by law supposed to be responsible for management of some environmental issues. Often, many local governments and state agencies plead lack of fund to handle this responsibility. For example, in Nigeria, urban solid waste management is a statutory responsibility of the local government. But it often pronounced that local authorities are fiscally incapacitated. Some state governments have taken up the responsibility. Yet, the state governments failed much like local government authorities (Uchegbu, 1999). In developed countries, the situation is different as local authorities have performed marvelously in environmental management. For example, London Borough of Sutton developed and funded schemes including projects on environmental appraisal techniques and waste minimization. Other cities with high reputation for environmental management are Leicester, Lead and Peterborough. In these cities, several demonstration projects on energy conservation, environmental protection and community facilities were implemented (Morphet & Ham, 1994). Local and State governments provide environmental finance through the annual budgetary allocation, grants and special funds.

State and local authorities can enter into partnership agreement with international donors on environmental protection projects. Local councils in Europe today vote huge sum of money to eco-management (Local Government Management Board, 1993). Similarly, state and local councils can contribute significantly to environmental finance in Nigeria through direct funding and external fund procurement. Studies on the funding experiences in East Asian countries offer encouraging revelations. The budgetary allocation for pollution control in Taiwan in 1991 was US\$1.1b (0.7% of GDP).

The federal government provided only one third of the fund. The remainder was provided at the lower level. Solid waste management gulped the largest share (56%), but subsequent plans witnessed an increase in investment in sewerage management with an estimation of US\$3.5 billion in its 1990- 95 plan (World Bank, 1994). Similarly, Korea spent US\$660 million on environmental protection in 1991. The largest part of the fund went to pollution control, with 82% (about 0.2% of GDP) going to urban water supply, sewerage, sanitation and solid waste management. Thailand spent an estimate of US\$350-500 million a year, about 4.4% of the GDP, on pollution control. Future plans for Bangkok include sewerage treatment system (US\$800-1200 million), hazardous waste treatment facilities (US\$200 million) and additional investment in solid waste disposal. These examples demonstrate three relevant points. Firstly, local government is a major financier of environmental management.

Secondly, environmental protection is treated as a priority in all levels of government. Thirdly, internal funding is emphasized as a primary source of fund. Such experience is

relevant to lower levels of government in Nigeria in their participation on environmental protection.

#### ✓ *FUND FROM THE OIL REVENUE*

Huge revenue accrues to the Federal government of Nigeria from the oil industry. The management of the oil revenue in the past has been highly disappointing. The flow of financial resources from the sector was ineffective in inducing commensurate economic development because of widespread leakage. In the expenditure pattern, the protection of the environment of the communities where oil is derived is not given due consideration. At the time OMPADEC was inaugurated in October, its financial position was N3,412,587,785.50 (credit balance in the 1.5% Presidential Task Force fund as at May, 1992); N 2,411,421,327.38 (debit balance); and N1,001,166,458.12 (net credit balance). The sum of N 1,001,458.12 was shared, based on the oil revenue sharing formula at that time, among the six oil producing states.

#### ✓ *ECO-TOURISM*

This as a source of fund according to (Tisdell, 1999) presented a compelling case for the integration of biodiversity conservation with economic development. It highlights the extent to which eco-tourism can be harnessed to reconcile economic utilization of an area with nature conservation and to finance the management of tourism. Eco-tourism is that which is based on the appreciation of the richness of species and environmental integrity. There are no available data on the performance of tourist centres in Nigeria such as Yankari Games Reserve and Obudu Ranch etc. But a developed tourist park with adequate infrastructures and services could yield financial returns much higher than that from alternative uses for the land.

In countries like Kenya and Zimbabwe, ecotourism is a major source of income and alternative employment for the local people. Through eco-tourism, the habitat is protected. Eco-tourism is therefore, both a protective strategy and a source of finance for management. It provides fund for the management of protected areas and environmental protection related activities.

#### ✓ *FUND FROM ENVIRONMENTAL TAXES*

Environmental taxes are considered among the most attractive environmental policy instruments. But the implementation of environmental taxes has been poor in developing countries. Wallart (1999) examined the economic feasibility, practical policy considerations and design of environmental tax instruments and ways to make them attractive. He also modeled the ways federal and regional governments using tax rates on pollutant emission determine suitable policies and plans. Environmental tax if fully introduced in Nigeria, could generate huge fund from many areas including mining, oil exploration, forestry, urban industry and transportation. In developed countries, environmental tax debate has taken a wider dimension. Proponents believe that the primary reason is to reduce

environmental problems. For instance, urban air pollution can be reduced through automobile tax.

Sevigny (1998) study on the design and effects of automobile tax on pollution emission in US justifies this claim. He used simulation model to analyze the sensitivity of travel demand and the resulting emissions to different tax rates and demand elasticity. He remarked that emission tax has the potential to significantly reduce emission from household vehicles, even when travel demand is relatively price inelastic. Braunlund & Green (1999) also studied the potentials of ecological tax reform and its adoption in the Nordic countries and observed that good information on the functioning of household and market decisions and the link between changes in pollutant emission and environmental and financial costs are needed to develop a suitable environmental tax system. The tax could account for large proportion of fund needed to manage the system and to finance other aspects of environmental management.

#### ✓ *FUND FROM POLLUTION ABATEMENT*

A popular aspect of public tax for environmental protection is pollution abatement. World Bank (1994) analyzed the strategy as adopted by OECD countries. Pollution abatement tax is intended to force the private sector to internalize the cost of pollution. The argument arising from this is that polluters should be made to bear the cost of the pollution they create. This is termed "end of the pipe abatement fee" which implies that the charge on pollution should be commensurate with the volume of pollution. Opponents argue that high abatement could discourage production as it encourages environmental protection. But where polluters are made to pay high abatement, the financial liability will discourage pollution.

Moreover, huge sum of money is realized from pollution abatement in some OECD countries. It could equally be a viable source of fund for environmental protection in Nigeria if well adopted. A data base system is required for proper assessment of charges and the design of collection mechanism. Apart from being a sustainable source of environmental fund, it is a useful tool for encouraging environmentally responsible public behaviour.

#### ✓ *FORESTRY RENT*

Forestry departments all over the world have been very weak, under-funded and under-equipped. But rent and taxes from the forestry sector could reduce forest lost as well as provide fund for environmental protection. High rents and taxes will lead to higher domestic prices of logs, induce greater efficiency in their uses, create more competition in the wood processing industry, put less pressure on the natural forest and create less production wastes to be absorbed by the ecosystem. But essentially, forest tax would mean more funds for the substantially increased demand for environmental protection. Another potential source of finance from forestry is pharmaceutical royalty. This involves royalty and other payments by companies for access to medical resources in the forest and share of the patient that ensues from samples removed from the forests.

The growing popularity of the trado medical industry indicates a good potential source of fund for ecological environmental protection. The federal government has set up an institutional framework for the development of the trado-medical industry. But forest royalty remains unexplored in the country.

#### ✓ *FUND FROM THE OIL SECTOR*

In the oil industry, the Nigeria government set some guidelines which make it compulsory for concerned oil firms to finance some development projects in host communities. Several projects have been executed by oil firms in the oil producing communities with fund from outside the ecological tax and oil royalty. In the area of environmental protection and management, such programmes and projects include mangrove replanting, plantations, agricultural extension programmes, drainage and spill cleaning. The main problem of this approach is lack of proper monitoring and standard from the government. Host communities in the Niger Delta complain that the oil firms are not doing enough to protect their environment. As a matter of equity, a firm that contributes to the degradation of an environment should bear the cost of managing the situation. In this case, a public process is required to measure the costs, transform them into an effective public standard and follow it up with a pressure on the concerned firms.

#### ✓ *FUND FROM CORPORATE ORGANIZATIONS*

A number of Corporate organizations embark on community development particularly in the area of environmental management. This attitude is informed by the notion that the whole essence of an organization is to contribute to the development of the society such organizations implement programmes and projects directly or channel the fund through government agencies, NGOs and benefiting communities. In Nigeria, oil companies spend heavily annually on community programmes. Shell Petroleum Development Company (SPDC) in a five year plan period spent #12.6 billion on environment and community issues (SPDC, 1996). Similarly, other oil firms like Agip, Elf, Pan Oceans and Chevron show some financial commitments to the protection and management of the Nigerian environment. Chevron specifically allocated \$5 million to development in the Western Niger Delta in the five year plan (1997 – 2001) and some \$400 million to facility upgrading within the same period (SPDC, 1997). Similarly, other local and multi-national organizations could make voluntary financial contribution to environmental protection in Nigeria.

#### ✓ *FUND FROM NON-GOVERNMENTAL ORGANIZATIONS (NGO)*

Some environmental problems are highly complex that they require some special agents to handle them as large financiers like government and international donors do not have the facilities to effective implementation. Hence, Non-governmental Organizations (NGOs) are involved in environmental management, awareness, research and project

development. The number of NGOs in Nigeria has increased tremendously in the last few years. UNICEF identified 225 registered NGOs in Nigeria in 1995. Some of them are environment based, handling primarily projects on environmental conservation, protection and education. International agencies including the World Bank and UNDP consult with these NGOs on environmental projects in Nigeria.

Environmental NGOs are primarily involved in mobilizing fund for environmental programmes and projects. Many projects are carried out in collaboration with the local communities and sponsored by oil companies and development agencies. Adindu (1992) examined the activities of Pathfinder International, an NGO, in the Niger Delta on health, environmental and economic enhancement of local communities. Africare, an NGO, through its rural environmental programme mobilized fund for the environmental problems in the drought prone Gourtex Rural District of Niger Republic. Some 10,000 people in 200 villages benefited from agricultural projects under this programme. NGOs mobilize large sum of money but their main contribution is in mobilizing people into organized groups with the goal of self-reliance and development. Some NGOs have well organized plan of activities and huge annual budget (Goodland & Daly, 1992).

Their sources of fund include initial capital and savings, internally generated fund, aids from other organizations, long term loans on low interest rates, capital stock including investment in liability companies, endowment fund for some specific purposes and grants from foreign NGOs and international agencies. Others are aid from semi-government bodies and inter-governmental ventures, national agencies financing international projects, fund from multi-national organizations and fund from private donors such as charitable organizations. The major problem of NGOs in Nigeria is fund. Most NGOs start with internal fund, which often do not sustain them in business for too long when they have no access to external aid.

Moreover, some NGOs are run by unscrupulous individuals who see it as a source of wealth. This situation discourages donors. However, the government makes compulsory for every NGOs in Nigeria to register with a body, Association of Non-Governmental Organizations (ANGO) to enable it monitor the activities of the NGOs.

#### ✓ *FUND FROM VOLUNTEER ORGANIZATIONS*

The low fiscal resources from the government imply that external bodies including volunteer organizations have to assist government in funding environmental protection. Volunteers and philanthropic organizations fund infrastructure facilities in local communities. They sponsor projects on flood and erosion control, water supply and reforestation programmes. International Union for the Conservation of Nature (IUCN) in particular funded a study, an inventory of animal and plant species in the Niger Delta. Volunteer organizations sometimes co-implement projects with other bodies.

For example, Global 2000 Foundation in alliance with the World Bank and Anambra State Government implemented

water rehabilitation projects in Anambra State in late 1990s. Nigerian government should therefore design a system for encouraging fund flow from these organizations.

#### ✓ *INTERNATIONAL DONOR AGENCIES*

International agencies exist primarily to promote development in countries. They provide fund, material and technical aids to local communities through their national governments. Some international agencies exist as multi-lateral agreements of nations. The agencies include United Nations Development Programme (UNDP), United Nations Environmental Programme (UNEP), Food and Agriculture Organization (FAO), World Health Organization (WHO), International Monetary Fund (IMF), the World Bank, European Development Fund (EDF) and African Development Bank (ADB). The agencies at times enter into alliance to carry out environmental programmes. World Bank in particular has a good framework for co-financing agreement with other participants on environmental protection. The procedures for financial alliance are flexible, well specified and easily adaptable to African situations (World Bank, 1994). But in the international community, the level of Official Development Assistance (ODA) received by Nigeria is very low and decreasing. In 1992, it was only 0.5% of the total ODA for the year. But Asian countries such as India received 5.2%, China 6.5%, Indonesia 4.6% and Pakistan 2.6%.

The recent decrease in the financial assistance from these agencies to African countries is attributed to economic recession and low political willingness of member countries, which reflects on the financial buoyancy of the donor organizations. Another reason is the poor credibility on the part of the developing countries. Dragun & Jakobson (1997) therefore suggested improvement in aid coordination, wider popular decision making process, transparency and capacity building in the receiving nations.

#### ✓ *FUND FROM BILATERAL AGREEMENTS*

Provision of financial assistance for environmental protection and management to developing countries is popular among advanced countries. Countries like the US, Germany, Canada and Switzerland established special fund to assist developing countries in solving their local development problems. The fund is channeled through special agencies such as Swiss Development Co-operation, Japanese Policy and Human Resource Development Fund, British Department for International Development and USAID. Nigeria should intensify its position on the use of this fund through good financial reputation and management transparency.

#### ✓ *FUND FROM THE LOCAL COMMUNITIES*

Informal self-help provision is the most elementary contribution of communities to environmental protection. Communities could initiate, plan, fund and implement projects on community facilities and environmental protection. In recent years, there is a global emphasis on capacity building and support for community based improvements and credit aids for self- help programmes. Self- help funding of

community projects is not new in Nigeria. The potential of this source of fund has to be fully exploited for environmental protection programmes. The effectiveness of this source of fund depends on level of awareness and willingness to participate. This approach could begin with public awareness building to sensitize the local people, promote environmental behaviour and encourage willingness to participate in funding and project implementation. For example, community participation in programmes in Cirebon, Indonesia began in the 1970s with a campaign to improve public awareness of environmental health issues and requirements for systems use, protection and maintenance (World Bank, 1994). With support from Swiss Development Corporation, the Cirebon Urban Development Project (CUDP) was initiated in 1978 with the primary goal to improve water supply. Subsequently drainage, sanitation and solid waste improvements were introduced. In 1993, a Community Participation Programme (CPP) was introduced as a public campaign on proper use of the newly provided facilities.

The scope of the programme was later expanded to cover physical projects based on community financing. By mid-1993, 68% of the projects were funded by the communities. The important lessons from this programme are cost reduction and improvement in local financing. In 1993, Cirebon received the Adipura (Clean City) Award following its tremendous improvement on environmental management. In the Community Infrastructure Projects (CIP) in Northwest Frontier Province, Pakistan, communities financed 20% of the investment cost of facilities and 100% of operations and maintenance cost.

The programme was initially designed by the World Bank and financed by Swiss Development Cooperation and Japanese Policy and Human Resource Development fund. CIP involved water supply, drainage systems and flood protection, and sanitation and solid waste management. These Asian experiences show that sustainable domestic funding and cost minimization could be achieved through the local communities. In Nigeria, local communities have good organizational framework through which community environmental projects can be carried out. The framework could be a channel for finance mobilization and delivery for environmental protection in local communities.

#### IV. CONCLUSION

This study has shown that Sustainable Environmental Pollution Management is yet to be achieved in Nigeria. This is because government is yet to regard Environmental Management as a priority and also, due to lack of fund. The environmental problems in Nigeria are acute, pervasive and increase rapidly. This should be a source of great and justifiable concern for all today. The effect of pollution on air, aquatic or water and on land has adverse impacts on health and economic activities. The increasing population pressure, the decline levels of water tables and more airborne and water-borne pollution from industries and domestic waste. Underpinning all these problems are poor management capabilities and corruption which hinder effective government policies.

Allied to these is the fact that in Nigeria the environment has so far not been seen as an important matter by the politicians, companies and individuals. The re-examination of the environmental problems provides the avenue for the EIA to be seriously involved in all the issues concerning the environment in order to make and implement policies to tackle the various environmental pollution problems. If the various sources of finance explored in this write-up can be utilized, this will go a long way in improving the environmental conditions of the country. However, everybody has a role to play in this regard as all stakeholders have to work together for the betterment of Nigeria.

#### V. RECOMMENDATIONS

Environmental protection techniques need to be cultured, home-grown and the framework should be "bottom-up". It should be community based. The framework should be organized at the village or community level. A number of communities should be grouped together from the (political) Ward level to Local Government level. Environmental protection agencies at the local government level should be empowered to punish offenders. The environmental protection officers should be fluent in the local language(s) of the area of their jurisdiction. This is because a majority of those who are engaged in tilling and ploughing the soil do not have the western education (Omofonmwan, 2000).

When the people become aware of the effects of their unwise use of the environment, the goals of the National Policy on Environment will be easy to achieve. The addition of environmental awareness education courses to the curricula of primary and post-primary schools is important. From the evaluation of the country's past programmes on policy on environmental problems, policy discontinuities and weak institutional capacity have impacted more adversely on the poor than physical developments and their biophysical impacts. The mandate of the Federal Ministry of Environment (FMENV) could be upgraded to promote and support poverty alleviation as an integral part of the environmental management.

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