

Environmental Impact Assessment: A Veritable Tool For Sustainable Development In Nigeria

¹Udegbumam, D. Onuora; ¹Agbazue, V. Eze and ²*Ngang, B. Ugboji

¹Centre for Environmental Management and Control (CEMAC) University of Nigeria, Enugu Campus Enugu State, Nigeria

²*Department of Pure and Industrial Chemistry, University of Nigeria, Nsukka, Nigeria.

*Corresponding author: benedictgabriel2@gmail.com

Abstract: Environmental Impact Assessment (EIA) has evolved and become part of major project requirement in many countries including Nigeria for the attainment of sustainable development and reduction of poverty levels of people affected by projects. EIA is a useful tool for promoting sustainable development because it contains many components that can facilitate equality in every aspect and it can minimize environmental degradation by identifying problems before they occur. Environmental Impact Assessment (EIA) needs to show that it can contribute to poverty alleviation, employment generation, environmental protection and improved economic development effectively towards sustainable development. This paper examines EIA in Nigeria, how it can be used effectively and efficiently for developmental projects and its shortcomings while implementing during implementation.

Keywords: Environmental impact assessment, sustainable projects, Nigeria.

Date of Submission: 11-09-2017

Date of acceptance: 13-09-2017

I. Introduction

The quest to protect the environment from constant degradation has been of global concern for decades now. Environmental Impact Assessment (EIA) is identified as a veritable tool for sustainable development. EIA has been adopted as an environmental management and planning tool by many developed and developing countries after its introduction in the United States in the late 1960s (Leu et al, 1996). In order to achieve sustainable development, Nigeria working in consonance with other countries identified EIA as a tool for the integration of environmental, social and economic factors into development (Nwafor, 2006). EIA needs to show that it can contribute to poverty alleviation, employment creation and improved economic development effectively towards sustainable development (Needhidasan and Thayumanavan, 2013).

In 1992, Nigeria adopted EIA Act No 86 which makes it mandatory for the application of EIA to all projects in the private and public sector of the economy. This Act provides a comprehensive legal and institutional framework for Environmental Assessment in Nigeria. This paper explains EIA in Nigeria, the relationship between EIA and sustainable development and problems associated with effective use of EIA.

II. EIA In Nigeria

Nigeria (Africa's most populous nation), got independent since 1960, occupies an area of 923,768 km² with varied climates and seasons. Presently, its 2015 estimated population is over 182,202,000 million people while 2006 population census is 140,431,790 million people.

Prior to oil, agriculture (before 1970) was the economic mainstay. With financial resources available from oil and no development policy, unguided urbanization and industrialization took place. Uncontrolled population growth, desertification, and deforestation led to degradation and devastation of the environment. As desirable and necessary as development is, it became an albatross not of itself but because of the lack of appropriate policies to guide it. There were several sectoral regulations aimed at controlling environmental degradation which were unsuccessful due to the absence of effective sanctions. Economic considerations and fundamental lack of knowledge of interdependent linkages among development processes and environmental factors, as well as human and natural resources, resulted in an unmitigated assault on the environment. However, the environment and the need for its preservation (in spite of all efforts by United Nations Environment Program [UNEP] and International Conventions which Nigeria ratified), took centre stage after the momentous and singular event of the secret dumping of toxic waste in Koko Port, Bendel State (now Delta State) in May 1988 by foreign parties. This was followed by the promulgation of the Harmful Wastes (Special Criminal Provisions) Act 1990. In its wake, international seminars and workshops were held in Abuja and Lagos

and the consensus was for appropriate environmental legislation to discourage short-term plans and ‘fire brigade’ approaches to environmental issues.

An institutional framework was set up to deal with the problems of our environment. The Federal Environmental Protection Agency (FEPA), established by Decree 58 of 1988 of the same name and amended by Decree 59 of 1992, was given responsibility for control over our environment and for the development of processes and policies to achieve this. Apart from publishing the National Policy on the Environment (NPE) in 1989, with the policy goal of achieving sustainable development, it published other sectoral regulations including the National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulation 1991 wherein EIA was made obligatory only when so demanded by FEPA and compliance was within 90 days of such demand. However in the oil industry the principal legislation is the Petroleum Act 1969 and all derivative regulations charged DPR among others with pollution abatement. States and Local Government Councils (LG) which comprise the second and third tiers of government were encouraged under Decree 59 of 1992 to set up their own environmental protection agencies. Separate EIA legislation, the EIA Decree 86 of 1992, was promulgated establishing FEPA as the apex regulator, making EIA mandatory for all developmental purposes (although with some exceptions). Under it FEPA has published various sectoral EIA procedures together with EIA procedural guideline in 1995.

III. Purpose Of EIA

EIA is a planning tool that is now generally accepted as an integral component of sound decision making. The objective of EIA is to foresee and address potential environmental problems/concerns at an early stage of project planning and design. The need to avoid adverse impacts and to ensure long term benefits led to the concept of sustainability. Therefore EIA should assist planners and government authorities in the decision making process by identifying the key impacts/issues and formulating mitigation measures. The main purposes of EIA are predicting problems, to find ways to avoid them, to enhance positive effects and to go for alternatives if necessary. EIA provides a unique opportunity to demonstrate ways in which the environment can be improved as part of the development process and it enables monitoring programs to be established to assess future impacts and provide data on which managers can take informed decisions to avoid environmental damage and increase of poverty among the people.

The overview of the EIA process is represented in figure 1

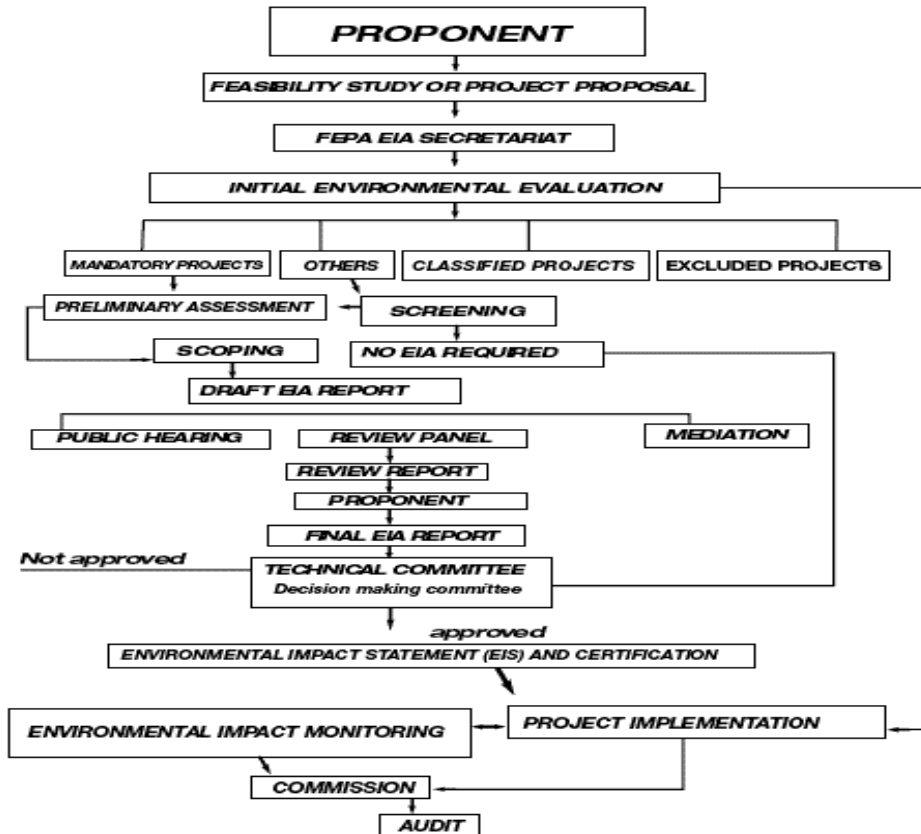


Figure 1: Flow chart of FEPA EIA procedure of, 1995.

IV. Principles Of EIA

EIA is intended to identify the impacts (both beneficial and adverse) of proposed public and private development activities. Often, the focus is dominantly environmental (biophysical); but best practice also addresses social and economic aspects. EIA is mainly used at the level of specific developments and projects such as dams, industrial plants, transportation infrastructure (e.g. Airport runways and roads), farm enterprises, natural resource exploitation (e.g. Sand extraction). EIA is most valuable when applied early in the planning process for a project as a support to decision making. It provides a means to identify the most environmentally suitable options at an early stage, the best practicable environmental option, and alternatives to the proposed initiative; and thus avoid or minimize potential damaging and costly negative impacts, and maximize positive impacts (Needhidansan and Thayumanavan, 2012).

V. EIA And Sustainable Development

The concept sustainable development was only introduced into the global environmental debate in the 1980s as an expression of the interdependence between economic development, the natural environment and people and it is given diagrammatically in the figure 2.

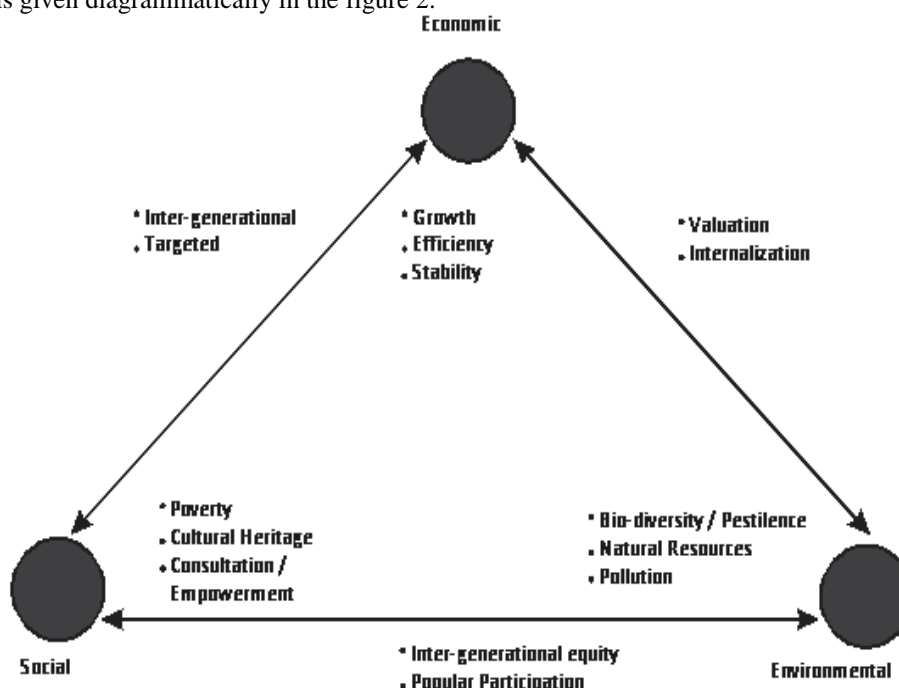


Fig. 2: Element of Sustainable Development (Munasinghe, 1993).

The most widely accepted definition of sustainable development describes it as ‘development that meets the needs of the present without compromising the ability of future generations to meet their needs and aspirations’ (WCED, 1987). Sustainable development seeks to establish a path along which development can progress while enhancing the quality of life of people and ensuring the viability of the natural systems on which that development depends.

The World Commission on Environment and Development also emphasizes governance and suggests the basic requirements for the achievement of sustainable development like, a political system that secures effective citizen participation in decision-making, an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis, a social system that provides solutions to relieve the tensions arising from disharmonious development, a production system that respects the obligation to preserve the ecological base for development, a technological system that can search continuously for new solutions and an administrative system that is flexible and has the capacity for self-correction (Rajaram and Das, 2006).

VI. Fundamental Principles Of Sustainable Development

The United Nations Environment Programme (UNEP) definition is an alternative wording of the more widely used definition of sustainable development derived from the report of the World Commission on Environment and Development, chaired by Gro Harlem Brundtland. The principle of intergenerational equity stated in this much quoted extract encapsulates one of the main themes of the Brundtland report (WCED, 1987) and may be regarded as one of the fundamental pillars of the sustainable development concept. At first glance,

the UNEP definition of sustainable development is more meaningful than Brundtland's or Rio's. It defines both development (improving the quality of human life) and sustainability (living within the environment's carrying capacity), in terms that are more immediately understandable than the Rio and WCED equivalents. However, in doing so the definition becomes little more than a statement of the obvious. That's the goal of development is to improve the quality of human life is not in dispute, nor is the need to stay within the carrying capacity of supporting ecosystems. If development passes the test of equity, it can be left to those people themselves to decide what is important for their quality of life and what constitutes an improvement in itself. Intergenerational equity therefore is the only test needed have whether the development is true development, in Rio's terms. This is particularly relevant in environmental assessment, where public participation processes allow people to decide quality of life issues for themselves. Meanwhile, although the concept of carrying capacity introduced by the UNEP addresses environmental considerations directly, it tends to be less useful than the principle of intergenerational equity that it replaces. This is because carrying capacity is often even more difficult to measure than equity; "we usually only discover its limits after we have exceeded them. Carrying capacity continues to change just as rapidly, with the advent and take-up of some technologies that increase it and others that decrease it. It is a moving target, which can be useful for planning development activities, particularly when they involve choices between relevant technologies. Where it is measurable, it can be useful as a way of interpreting the principle of intergeneration equity. However, its variability makes it rather less useful (IAIA, 2002).

As a general test for sustainable development, these are the steps to be followed while implementing developmental projects.

1. Preliminary activities: Includes the collection of background information as soon as a project has been identified apart from the selection of team members.

2. Impact identification: Involves a broad analysis of the impacts of project activities with a view of identifying those, which are worthy of a detailed study.

3. Baseline study: Collection of detailed information and data on the condition of the project area prior to the project's implementation.

4. Impact evaluation: Should be done whenever possible in quantitative terms and should include the working-out of potential mitigation measures. Impact evaluation cannot proceed until project alternative has been defined, but should be completed early enough to permit decisions to be made in a timely fashion.

5. Assessment: Involves combining environmental losses and gains with economic costs and benefits to procedure a complete account to each project alternative.

6. Documentation: It describes the work done in the EIA. A working document is prepared to provide clearly stated and argued recommendations for immediate action. The working document should contain a list of project alternatives with comments on the environmental and economic impacts of each.

7. Decision-making: It begins when the working document reaches the decision making body, who will either accept one of the project alternatives, request further study or reject the proposed action altogether.

8. Post audits: These are made to determine how close to reality the EIA predictions were.

The conditions which must be realized for projects to be compatible with sustainability comprise the following (Mikesell, 1994).

i. Depleted renewable natural resources must be restored or the social costs of adequate compensation to future generation for the loss of natural resources, capital must be included in the social cost of the project.

ii. Compensation to future generations for the loss of depleted non-renewable natural resources, capital must be included in the social cost of the project.

iii. Damage to life-supporting natural resources and environmental assets must be avoided, or the cost of avoidance included in the social cost of the project.

iv. The compensation included in the social cost of the project may take the form of either contributing to the quality and/or quantity of natural resources assets equivalent to what has been depleted or damaged by the project, or the accumulation of funds sufficient to offset the loss of income to future generations resulting from the depletion of natural resources capital associated with the project.

VII. Problems Associated With Effective Use Of Eia

Impact assessment tools have been applied internationally to ensure that proposed actions are economically viable, socially equitable and environmentally sustainable (IAIA 2002). The relatively well-developed legislative and policy framework in the country, combined with the great challenges for sustainable development in Nigeria, create the opportunity for EIA to play a leading role. For EIA to fulfill its real potential, Nigeria needs capacity- building for administrators, practitioners in the private and the public sector; monitoring of compliance with EIA recommendations; sharing of 'best practice' across the country; linking EIA with the full project life cycle; harmonisation of legislation within the states; and strengthening the links between Environmental Impact Assessment, Strategic Environmental Assessment, national planning and other high-level decision-making processes.

There is also a need to dispel the impression that EIA is an obstructive or delaying process that keeps people in poverty rather than one that ensures future generations will enjoy resource security and a good quality of life (Weaver et al, 2002). Nigeria, like most developing nations is experiencing rapid population growth, with simultaneous economic growth and industrialisation. Informal, small and medium- scale enterprises have now become a reality, and create a special opportunity for stimulating economic growth within the country. A number of areas exist where small and medium -scale enterprises (SMSE) have potential environmental impacts although in some cases they can be very beneficial, as with waste-collection businesses.

Many small and medium-scale enterprises (SMSE) create hazardous wastes, e.g. lead from small-scale lead mining in Zamfara State; Northern Nigeria caused a high number of deaths at list 163 dead including 111 children and 355 cases discovered. Investigation showed the people had been digging for gold at the times of their deaths, in an area where lead is prevalent. It is thought that the poisonings were caused by the illegal extraction of ore by villagers, who take crushed rock home with them to extract. This results in the soil being contaminated from lead which then poisons people through hand-to-mouth contamination. Others have been contaminated by contact with contaminated tools and water in the area (Wikipedia, 2010). With the rapid development of micro-finance and its anticipated effects, there is an increasing need to address the environmental impacts of micro-enterprise activities. Thus, micro financing institutions can apply EIA to evaluate potential impacts of a variety of enterprises, regarding the types of inputs, wastes produced and waste disposal (Lal, 2001). A specific need exists to adapt EIA for use in these small-scale enterprises.

EIA is often weak on indirect, secondary and synergistic impact except where the EIA team is sufficiently qualified and well funded. Indeed, by most measures, project –level EIA is a self-limiting and ineffective response to current scales and rates of ecological deterioration. It is incapable of going beyond “impact fixation” to address the causes of unsustainable development (Goodland and Tillman, 1995).

These problems provided the conditions and the driving force for the shift from reactive project-level EIA to a broader proactive EIA of policy, plans and programs in Nigeria at a stage where major strategic decisions have not been made. These problems are put in bold relief by the new demands that are being made on EIA and sustainable development by the international agreements signed at the *Earth Summit* and by the endorsement of Agenda 21, and the new environmental problems that are emerging as we progress into the 21st century (Nwafor, 2006).

VIII. Conclusion

Sustainable development as a new paradigm of development needs time, understanding, acceptance, adjustment and implementation. That notwithstanding, EIA practitioners in Nigeria and other developing countries need to be acquainted with the development of new attitudes encompassing environmental protection and sustainable development. They should demonstrate a commitment to work towards sustainable development since EIA is one of the pathways through which the principles of environmental sustainability will be integrated into the nation’s development activities and agenda.

In the same vein, a commitment to sustainable development should be built around the needs of the people especially the poor. And since poverty reduction is essential for achieving sustainable development, EIA practitioners should ensure that their efforts and activities revolve around the objective of poverty reduction. Indeed, it is essential that the future EIAs in Nigeria should progressively incorporate poverty alleviation, the key sustainable development indicator, and such other indicators as welfare, social and cultural issues, gender, health, the informal sector and climate change impact.

References

- [1]. Federal Environmental Protection Agency. (1992). *Environmental impact assessment procedural Guideline*. FEPA, Abuja.
- [2]. Goodland, R and Tillman, R (1995) Strategic environmental assessment: Strengthening the EIA process in Matri, L (ed.) *Environmental Assessment (EA) in Africa: A World Bank Commitment*. Proceedings of the Durban (South Africa) Workshop, Durban, 25 June: 3-34.
- [3]. IAIA (2002). *Statement on impact assessment to the Third preparatory committee meeting of the World summit on sustainable development (WSSD)*. New York, Fargo, USA.
- [4]. Lal, A (2001) Micro- finance and environmental management. Microfinance, community development and environment- Working Paper, July 2001. Retrieved from <http://www.qdrc.org/icm/environ/abhishek.html>
- [5]. Leu, W. S, Williams, W and Bark, A. (1996) Development of an environmental impact assessment evaluation model and its application: Taiwan Case Study. *Environmental Impact Assessment Review*, 115- 133.
- [6]. Mikesell, R. F. (1994). Environmental assessment and sustainability at the project and program- level. In: Goodland, R and Edmundson, V. (editors) *Environmental Assessment and Development (pp 20-25)*. World Bank: Washington, D.C.
- [7]. Munasinghe, M. (1993). *Environmental Economics and Sustainable Development*. World Bank: Washington, D.C.
- [8]. Needhidasan, S and Thayumanavan, S. (2012). Environmental impact assessment- A decision making tool for water resources projects in India”. *International Journal of Advanced Scientific and Technical Research*. 2(5), 139-145.
- [9]. Needhidasan, S and Thayumanavan, S. (2013). Sustainable development through environmental impact assessment for developmental projects- An Overview. *International Journal of Advances in Engineering and Technology*, Vol. 6, Issue 4, 1585-1591.

- [10]. Nwafor, J.C. (2006). *Environmental impact assessment for sustainable development. The Nigerian perspective*. Enugu: Environmental and Development Policy Center for Africa (EDPCA) Publication.
- [11]. Rajaram, T and Das, A. (2006). Need for participatory and sustainable principles in India's EIA System: Lessons from the Sethusamudram ship channel project. *Impact Assessment Project Appraisal* 24, 115-26.
- [12]. Weaver, A.V.B, Keatimilwe, K, and Tarr, P. (2002). Environmental impact assessment in Southern Africa: In IEMA and EIA Center. *Environmental Assessment Year Book*. Lincoln: IEMA and EIA Center.
- [13]. Wikipedia. (2010). *Zamfara state lead poisoning epidemic*. Retrieved from [http:// www.en.wikipedia.org/wiki/Zamfara-state](http://www.en.wikipedia.org/wiki/Zamfara-state)
- [14]. World Conference on Environment and Development (1987). Our common future. *Oxford University Press*, New York.

Agbazue. "Environmental Impact Assessment: A Veritable Tool For Sustainable Development In Nigeria." IOSR Journal of Applied Chemistry (IOSR-JAC) , vol. 10, no. 9, 2017, pp. 38–43.