

## **1.0 Introduction**

Nigeria is committed to a national policy that ensures sustainable development based on proper management of the environment. This demands positive and realistic planning that balances human needs against the potentials that the environment has for meeting them. The continuing increase in urban development presents a significant challenge as well as a timely opportunity for the application of environmental and conservation management practices.

Urban developmental issues are increasingly prominent, complex and inter-related. The developmental projects have become major contributors to national economies and they play a key role as nodes in global markets. At a time of deepening globalization and increasing competition for investment, urban centres have become the target of a wide range of public intervention. More than half of the world's population now live in urban areas. This has been projected to keep growing as human population increases. Urban development policies seek to address a issues ranging from managing urban expansion to fostering competitiveness, innovation, social inclusion and environmental sustainability.

The impacts of urban development projects occur in different forms. While significant benefits result for selected individuals, other biodiversity and people, especially the poor, who co-existing in the area where the developmental project is be sited often bear the brunt of adverse impacts of such project. This has given rise to the need for Environmental Impact Assessment (EIA) which assist stakeholders to identify the environmental issues, mitigation measures and alternatives that need to be assessed beforehand.

This has necessitated the demand for an Urban Development based EIA guidelines, especially for the planning and implementation of housing, settlement and business development schemes. This Guidelines has been prepared to meet this demand for project proponent, urban planners and practitioners, involved in conducting EIA and also assist stakeholders to

identify the environmental issues, mitigation measures and alternatives that need to be assessed and considered during the study.

It is to be noted that this guideline is expected to serve for development of Housing, Settlement, Commerce and Business projects, as well as some other similar Urban development project.

## **2.0 Project Justification**

The project proponent shall provide necessary and adequate information on the justification of the project. This shall include a summary of the report of the Project's feasibility study; the need, value and sustainability (social, cultural and economic) of the Project. Such justification shall expressly define the benefits of the Project to its intended end-users and indicate the over-riding advantages or positive impact of the Project over its anticipated environmental impacts. The justification may also include the rationale for selecting the Project amongst various available options or alternatives and any socio-economic factor's justifying the Project.

## **3.0 Project Description**

The proposed Urban Development (Housing, settlement, commercial and commerce) project should be described in details. The proponent should provide in details the project nature, size, location and its importance to the Local, State and National development. The project site description shall include, but not limited to; site survey, geographic and political location of the project site; extent of the land, and boundaries are to be furnished. Description should also include a schematic diagram, structural plans and layout of the development, which should be detailed. Details of litigation(s) pending against the project/ proposed site and or any direction passed by the court of law against the project, if any, should be stated. The EIA study should also report a description of the development in relation to:

- Description of development type with physical characteristics, size, magnitude, numbers, scale and design.
- An estimate of quantities and types of materials needed for maintenance, construction and operational phases.
- The land area to be taken by the development with its location clearly

defined on a map.

- Site preparation process
- Material and path handling
- Transportation and storage of construction materials
- The types of equipment and their operations
- The uses to which the land will be put should be described.
- The estimated duration of the construction phase, operational phase and where appropriate, decommission phase should be given.
- The numbers of workers and/or visitors entering the site during construction and operation should be estimated.
- The access to the site and likely means of transport should be given.
- An estimate, by type and quantity, of expected residues and emissions (heat, noise, vibration, light, heat, radiation, air water, and soil contamination/pollution, etc.) resulting from construction and operation phases of the proposed project.
- A description of waste stream and management approach to be used at each developmental phase of the project.

Emphasis should however be given to those components with the most potential for significant short and long term environmental impacts.

#### **4.0 Description of the Environment/ Baseline Data**

Environmental Baseline data are required to establish the situation of the project designated site preceding the actual construction work or development. Baseline studies are intended to establish the present state of the environment, taking into account changes resulting from natural events and from other human activities. If an environmental description is flawed, this will reduce the accuracy of subsequent predictions and mitigation measures.

The baseline environmental description shall include, but is not limited to; the biophysical environment (project location, geology and topography, climate, water resources, flora and fauna characteristics, wildlife and ecological studies) and human environment (social, cultural, economic and health characteristics as well as community participation). Similarly,

detailed description of land use activities adjoining the proposed site. Land use activities to be presented include but not limited to infrastructure: roads, electricity, potable water sources, health facilities, transport and communication among others. Cultural and heritage sites, agricultural lands, commerce and industry should also be described.

The environmental description must not be limited the proposed site but must also assessment the likely impact of adjoining land use on the project and vice versa. Data obtained must be presented in the form of maps, reports, scientific studies, research articles, so as to complement the baseline studies.

#### **4.1 Environmental resources**

Environment facets to be considered in relation to urban development but not limited to:

##### **4.1.1 Physical, chemical and biological description**

- i. Climate and air quality: Rainfall (trend, amount and pattern), wind pattern {speed and direction (presented with a wind rose)}, temperatures, relative humidity, climate zone, air quality measurement (odour, noise, gaseous and particulate pollutants).
- ii. Topography: Drainage pattern, elevation and slopes {this can be presented with a digital elevation model}
- iii. Surface and ground water: physical and chemical quality, seasonal variation, quantity.
- iv. Soil: physical and chemical characteristics,
- v. Vegetation: types, species diversity, phytomas, pathological problems, density, rare or significant species or communities, wetlands.
- vi. Wildlife: population density, terrestrial and aquatic systems, rare and significant species, significant habitat.

#### **4.2 Human Environment**

- i. Residents affected: Location, access, population (demographic and social characteristic such as population distribution, Average household size,

population density, sex ratio, social structure and literacy levels), economy activity (employment status, income distribution), housing, concerns,

- ii. Waste management: generation, storage, transportation, disposal, and recycling, energy source/services.
- iii. Land use: existing land use around the project area
- iv. Cultural: Historic sites, archaeological sites, native religious or harvest sites.
- v. Health: Indigenous population, migrant population, healthcare statistics, disease patterns, disease vectors, health needs, public health/ safety, waste management.

## **5.0 Associated and Potential Environmental Impacts**

The identification, prediction and evaluation of potential impacts of the project on the environment should be investigated and described. The impacts should be broadly defined to cover all potential effects of the phases involved in the project development on the environment. Also;

- (a) A description of direct impact and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative impact of the project should be addressed.
- (b) The types of impact in (1) above should be described with regards to human beings, flora and fauna, soil, water, air, climate, land, cultural and interactions amongst them.
- (c) Impacts during construction and operation phases should be considered including impacts that might arise from non-standard operating conditions, accidents etc.
- (d) Predicted impacts should be derived from baseline conditions as to prevail as a consequence of the project.
- (e) Identification of impacts should be by a systematic methodology such as project specific checklists, matrices, overlays, Ad-hoc, networks, geographic information system (GIS), expert opinion, Delphi technique etc.
- (f) A brief description of the impact identification method should be described and the rational for using it.

- (g) The significance of impacts should be assessed, taking into account appropriate national and international standards where available. consideration should also be made for magnitude, location and duration of the impacts. The choice of significance assessment should be justified and any contrary opinion elaborated upon.
- (h) The EIA study for fertilizer, Urea and Phosphates projects should also consider the cumulative impacts that could arise from a combination of the impacts due to other projects with those of other existing or planned projects in the surrounding area and including residual impacts.

In addition, the social and health impact of the proposed project shall be identified and addressed in line with the provision of the existing National Guidelines and Standard on Social Impact Assessment and Health Impact Assessment.

## **6.0 Mitigation Measures / Alternatives**

At this stage, the possible preventive, remedial and compensatory measures for each adverse impact shall be determined and recommended. A concise detail of potential impacts of project with corresponding mitigation measures should be provided. The project proponent shall state the mitigation measures that shall be taken against identified adverse environmental impacts of the proposed urban development projects. All the possible preventive, remedial and compensatory measures for each adverse impact shall be determined and recommended. A table showing the potential impacts of project with corresponding mitigation measures should be provided.

## **7.0 Environmental Management Plan (EMP)**

The Environmental Management Plan (EMP) outlines the mitigation, monitoring and institutional measures to be taken during project implementation and operation to avoid or control adverse environmental impacts, and the actions needed to implement the measures.

- (a) The EMP for the project development should be site-specific, focused and logical with a clear framework for management of key environmental impacts that could arise from the project.
- (b) The EMP should be prepared with involvement of key stakeholders (proponent, regulators and local community).
- (c) The EMP should cover all areas of the environment (human beings, flora and fauna, air, soil, water, land, cultural heritage, waste management, traffic and transport, noise and vibration) etc.
- (d) The EMP should also outline the following; be composed of the following; summary of potential impacts of the project; description of recommended mitigation measures; description of monitoring programme to ensure compliance with relevant standards and residual impacts; allocation of resources and responsibilities for plan implementation; implementation schedule and reporting procedures and contingency plans and disaster management plan.
- (e) The EMP should stipulate a monitoring schedule based on the types and complexity of mitigation measures. The schedule shall discuss the scope of monitoring process; how monitoring program shall be carried out.

## **8.0 Remediation Plan after Decommissioning**

Project proponent shall provide the best remediation plans that will be taken if the urban development project is to be decommissioned or closed (temporarily or permanently). Both beneficial and adverse environmental effects of the decommissioning or closure shall be scrupulously stated. Mitigation measures shall be proffered for the adverse effects due to decommissioning or closure. Project proponent shall also design means of restoring the project location back to its original status before the project execution.

## **Annex 1**

### **General EIA Report Writing Format**

The reporting format for EIA of fertilizer plant (including phosphates and urea) projects shall contain the following:

1. Table of Contents
2. List of Maps
3. List of Tables
4. List of Figures
5. List of Abbreviations and Acronyms
6. List of EIA Preparers
7. Executive summary
8. Acknowledgement
9. Introduction – Background information, Administrative and legal framework, Terms of Reference
10. Project Justification
  - need for the project
  - value of the project
  - envisaged sustainability
  - Alternatives to project
11. Project and/or Process Description
  - type
  - input and output of raw materials and products
  - location
  - technological layout
  - Construction process
  - project operation and maintenance
  - project schedule
12. Description of the Environment (baseline data acquisition)
  - study approach
  - geographical location and topographical features
  - field data
  - climatic conditions
  - air quality/noise/odour assessments



- vegetation cover characteristics
- potential land use and landscape patterns
- ecologically sensitive areas
- terrestrial fauna and wildlife
- soil studies
- aquatic studies, including hydrobiology and fisheries
- groundwater resources
- socio-economic resources
- infrastructural services

### 13. Associated and Potential Environmental Impacts

- impact identification and prediction methodology
- significant positive impacts
- significant negative impacts
- site preparation and construction impacts
- transportation impacts
- raw material impacts
- process impacts
- project specific incremental environmental changes (if any)
- project specific cumulative effects
- project specific long/short term effects
- project specific direct/indirect effects
- project specific adverse/beneficial effects
- project specific risk and hazard assessments

### 14. Mitigation Measure/Alternatives

- best available technology/best practicable technology
- liability compensation/resettlement
- site alternative, location/routes
- no project option
- impacts with corresponding mitigation measures

### 15. Environmental Management Plan

- Monitoring schedule
- parameters to be monitored
- Scope of monitoring

### 16. Remediation plans after decommissioning/closure

17. Conclusions and Recommendations

18. References and Bibliography

**19. Appendices**

**Annex 2**  
**EIA TEAM COMPOSITION**

Environmental Impact Assessment team for the Urban Development projects should comprise of at least the following professionals:

- Environmental Consultant/ Project Manager
- Ecologist
- Socio-economist
- Statistician
- Public health practitioner
- Urban/town planner
- Architect
- Surveyors
- Civil engineers
- Chemist
- Climatologist
- Meteorologist/Air quality expert
- Soil Scientist
- Geospatial analyst
- Geologist
- Data analyst
- Desktop publisher