

**Integrated Impact Assessment in The Nigerian
Niger Delta: Effects of Non-Implementation of
Health Interventions**

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Integrated Impact Assessment in The Nigerian Niger Delta: Effects of Non-Implementation of Health Interventions

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DECLARATION

- This thesis is being submitted in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy (PhD).
- I certify that the substance of this thesis has not already been submitted for any degree and is not currently being submitted for any other degree.
- I certify that this thesis results from my independent work/investigation, except where otherwise stated.
- I certify that to the best of my knowledge, any assistance received in preparing this thesis and all the sources used have been duly acknowledged and referenced in this thesis.

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Date: 30th December 2023

DEDICATION

To the memory of my beloved parents: Late Rev. Friday Thompson
Ndioho and Late Mrs. Nse-Obong Friday Ndioho

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ABSTRACT

Global health outcomes have increasingly been in the spotlight, given their association with attaining sustainable economic development. The application of Health Impact Assessment (HIA) stems from acknowledging the broader 'determinants of health' as prerequisite factors for enhancing the necessary state of complete physical, mental, and social well-being. This research is primarily focused on investigating the level of integration of HIA in integrated impact assessment (IIA) in the Nigerian Niger Delta region. It is aimed at evaluating and improving its use and implementation in the region. The research adopted a constructivist philosophical stance with an explorative multimethod qualitative research strategy, using the most appropriate qualitative method for each phase. Studies 1 and 2 utilised a systematic analytical approach using content analysis to develop an HIA screening tool and health content evaluation tool. The developed tool in Study 1 incorporated considerations for contextual issues of socio-political crisis and project abandonment, while Study 2 outlined the standard requirements for HIA incorporation in Environmental Impact Assessment (EIA) and developed a checklist to guide HIA incorporation. Study 3 involved systematically evaluating completed EIA reports using thematic analysis to identify gaps in practice. Prominent amongst identifiable gaps from the outcome of study three included non-consideration of health equity and inadequate compliance with HIA values. Study 4 involved data triangulation from Studies 1, 2, and 3, with data from semi-structured interviews. Interview samples for Study 4 were purposively selected from identified Integrated Impact Assessment (IIA) experts and community members within the study area. Interview data was subsequently analysed using a combination of inductive and deductive thematic analytical processes. Essential aspects of the research outcome that informed the development of a national framework for improved health integration and implementation included - the current inadequate level of health integration and community involvement, the duplication of responsibilities and regulatory conflicts, the monetisation of the EIA process and corruption, and the lack of a unified national guideline for HIA integration in IIA practice within the region. In conclusion, the research recommends fully implementing the proposed framework and the standardisation of impact assessment terminologies amongst HIA and EIA experts.

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ABBREVIATIONS AND ACRONYMS

| | |
|-------|--|
| AIDS | Acquired Immunodeficiency Syndrome |
| ACF | Advocacy Coalition Framework |
| AFDB | African Development Bank |
| AAAS | American Association for the Advancement of Science |
| ACM | Ambiguity-Conflict Matrix |
| ALARP | As Low as Reasonably Practicable |
| AEIAN | Association for Environmental Impact Assessment of Nigeria |
| BSc | Bachelor of Science |
| BPD | Barrels per Day |
| bcm | Billion Cubic Metres |
| CISHE | Cardiff Institute of Society Health and Ethics |
| CNL | Chevron Nigeria Limited |
| CBM | Coal Bed Methane |
| CCT | Constant Comparison Method |
| CIPP | Context, Input, Process, and Product |
| DPR | Department for Petroleum resources |
| DALY | disability-adjusted life years |
| PhD | Doctor of Philosophy |
| DK | don't know |
| DVM | Doctor of Veterinary Medicine |
| ESP | Economic Sustainability Programme |
| EBSCO | Elton B. Stephens Company Information Services |
| EIA | Environment Impact Assessment |
| ESIA | Environmental and Social Impact Assessment |
| ESHIA | Environmental, Social, and Health Impact Assessments |
| EIS | Environmental Impact Statement |
| EMP | Environmental Management Plan |
| FCT | Federal Capital Territory |
| FEPA | Federal Environmental Protection Agency |
| FMoE | Federal Ministry of Environment |
| FUO | Federal University of Otuoke |
| FHII | Framework for Health Integration and Implementation |

| | |
|--------|---|
| GSM | Global System for Mobile Communication |
| GDP | Gross Domestic Product |
| HIA | Health Impact Assessment |
| HNA | Health Needs Assessment |
| HRA | Health Risk Appraisal |
| HSE | Health, Safety and Environment |
| HPP | Healthy Public Policy |
| HIV | Human Immunodeficiency Virus |
| IMME | Impact Mitigation Monitoring Exercise |
| IPP | Independent Power Producer |
| ICT | Information and Communication Technology |
| IIA | Integrated Impact Assessment |
| IAIA | International Association of Impact Assessment |
| OGP | International Association of Oil and Gas Producers |
| IBP | International Business Publication |
| ICMM | International Council on Mining and Metals |
| IFC | International Finance Cooperation |
| IMF | International Monetary Fund |
| IPIECA | International Petroleum Industry Environmental Conservation Association |
| IPR | Interview Protocol Refinement |
| JBI | Johanna Briggs Institute |
| KASEPA | Kaduna State Environmental Protection Agency |
| KAPB | Knowledge, Attitude Practice, and Behaviour |
| LNG | Liquefied Natural Gas Limited |
| LGA | Local Government Area |
| MSc | Master of Science |
| MOU | Memorandum of Understanding |
| MECIR | Methodological Expectations of Cochrane Intervention Reviews |
| MEPU | Ministry of Environment and Public Utilities |
| NBS | National Bureau of Statistics |
| NESREA | National Environmental Standards and Regulations Enforcement Agency |

| | |
|--------|--|
| NEEDS | National Environmental, Economic, and Development Studies |
| NOSDRA | National Oil Spill Detection and Response Agency |
| NPE | National Policy on Environment |
| NPC | National Population Commission |
| NDR | Niger Delta Region |
| NAOC | Nigeria Agip Oil Company Limited |
| NIMASA | Nigerian Maritime Administration Safety Agency |
| NMDPRA | Nigerian Midstream and Downstream Petroleum Regulatory Authority |
| NNA | Nigerian National Assembly |
| NNPC | Nigerian National Petroleum Cooperation |
| NUPRC | Nigerian Upstream Petroleum Regulatory Commission |
| NIHL | Noise Induced Hearing Loss |
| NAG | Non-Associated Gas |
| NGO | Non-governmental Organisation |
| OND | Ordinary National Diploma |
| OECD. | Organisation of Economic Cooperation and Development |
| OPEC | Organization of the Petroleum Exporting Countries. |
| PHC | Petroleum hydrocarbon |
| PAHs | Polycyclic aromatic hydrocarbons |
| PHCC | Primary Healthcare Centres |
| PHAC | Public Health Advisory Committee. |
| QALY | Quality-adjusted life years |
| Ramp | Rural Access and Mobility Project |
| STIs | Sexually transmitted infections |
| SPDC | Shell Petroleum Development Company of Nigeria Limited |
| SIA | Social Impact Assessment |
| SMP | Social Management Plan |
| SMART | Specific, Measurable, Achievable, Relevant, and Time-Bound |
| SMoE | State Ministries of Environment |
| SEA | Strategic Environmental Assessment |
| SDG | Sustainable Development Goals |
| SDGs | Sustainable Development Goals |

| | |
|-------|---|
| TV | Television |
| TOR | Terms of Reference |
| TPNL | Total Petroleum Nigeria Limited |
| TB | Tuberculosis |
| UN | United Nation |
| UNDP | United Nations Development Programme. |
| USAID | United States Agency for International Development. |
| USD | United State Dollars |
| USEIA | United States Energy and Information Administration |
| UX - | User Experience Design |
| UI - | User Interface Design. |
| VNR | Voluntary National Review |
| WB | World Bank |
| WHO | World Health Organisation |

CHAPTER ONE

INTRODUCTION

1.1 Introduction and Background

The study's primary focus is to investigate the Health Impact Assessment (HIA) integration level in Nigeria's Impact Assessment practices. At the forefront of any sustainable development is the consideration of health outcomes or health benefits of such development. The International Association for Impact Assessment (IAIA) defines Impact Assessment (IA) as "the process of identifying the future consequences of current or proposed actions" (De-Jesus, 2009:1). In line with the IAIA definition of IA, Integrated Impact Assessment (IIA) is the process of identifying all forms of consequences (Health, Social, Environmental) of any current or proposed project, programme, or policy.

Developing countries like Nigeria are in a constant state of structural or physical development to catch up with their developed counterparts and meet the demands of an increasingly urbanised populace. This increasing pace of infrastructural development has led to an exponential increase in infectious diseases and deplorable health outcomes (Birley, 2011), hence the need for interventions. In addition, policies and programmes constantly evolve to regulate, control, and administer the rapidly urbanising culture and bridge the ever-increasing gap between rural and urban communities. These development projects, programmes, and policies directly affect the major determinants of health, such as lifestyle, human biology, environment, and healthcare organisations (Birley, 2011). The Niger Delta approach to impact assessment focuses on Environmental Impacts Assessment (EIA), which is legally backed by the Environmental Impact Assessment Act, No 86, of 1992.

The Lalonde Report of 1974 is an essential landmark for the health promotion movement. It emphasised the relevance of the aforementioned principal determinants of health (biological, environmental, lifestyle, and healthcare organisation (Kemmm and Parry, 2004). It also emphasised the existence of other determinants of health outside the health care system. These four principal determinants of health formed the foundation for health impact assessment (Kemmm and Parry, 2004a; Birley, 2011).

Health Impact Assessment (HIA) is defined, according to the World Health Organisation (WHO) Gothenburg Consensus, as a:

Combination of procedures, methods, and tools by which a policy, programme, or project may be judged as to its potential effects on the health of the population, and the distribution of those effects within the population, (WHO European Centre for Health Policy, 1999:4).

It is an exemplary way of encouraging the much-desired preventive approach to public health while strengthening the entire health system by eradicating or reducing most primary or secondary adverse effects of projects, policies, and programmes.

There is an increasing interest in harmonising all types of impact assessment documents (Metro-Vancouver and EcoPlan, 2015; Kim and Haigh, 2021). Given the existing legislative backing for some kinds of impact assessment (e.g., the EIA), it is concerning that some impacts could receive superficial focus while others are more emphasised. This research investigates the extent to which health concerns are covered in the traditional Integrated Impact assessment documents within the Niger Delta region of Nigeria. It also investigates the level of implementation of recommendations from already completed assessment documents to assess the effects of these impact assessment documents on intended goals.

The research was carried out in the Nigerian Niger Delta region. It is a region prone to environmental, health, and social degradation by human activities.

1.2. Background of the Research

The intricate relationships between human activities, the environment, and human health are well known. Many authors have emphasised these intricate interrelationships over the years (Birley, 2011; Harris-Roxas *et al.*, 2012; Abah, 2012; Adekola *et al.*, 2017; Dinh *et al.*, 2018; Bouchoucha, 2021). The interrelationships between the trios have led practitioners to formulate various policies and regulations to regulate human activities to ensure environmental sustainability and promote human health. Human activities in the form of plans, policies, programmes, or projects can be assessed through an evidence-based approach known as ‘impact assessment’

to identify the impacts they have or could have on human health or the environment (Tetlow and Hanusch, 2012; Green *et al.*, 2021). In this context, impact assessments are evidence-based procedures and processes that assess the health, socio-economic, and environmental effects of human activities and public policies (WHO, 2021). They involve evaluating various impacts (environmental, social, economic, and health) emanating from the plans, policies, programmes, or projects of human endeavour. The impact of primary concern determines the type of impact assessment needed. Thus, there are different types of impact assessments.

Major international organisations such as the World Health Organisation (WHO) and the International Finance Cooperation (IFC) have advocated for the development and use of Health Impact Assessment (HIA) in all spheres of policy formulation and application (WHO, 2001; IFC, 2012; WHO, 2021). This standpoint stems from the acknowledgement of the broader 'determinants of health' by Lalonde in 1974 (Lalonde, 1974; Glouberman and Millar, 2003; Irwin and Scali, 2007; Lucyk and McLaren, 2017; Tulchinsky, 2018). The determinants of health are considered prerequisite factors in enhancing the necessary state of complete physical, mental, and social well-being, which is the WHO's preferred state of good health (Lucyk and McLaren, 2017; Leonardi, 2018). Succinctly put, the attainment of good health, as contained in the WHO definition of health, is dependent on the control of the broader determinants of health and HIA is designed to minimise or eradicate the negative impacts of projects, programmes, or policies on these health determinants (Kemmer, 2004; Birley, 2011; Leonardi, 2018). Despite the innovatory disposition of HIA, the realisation of its goals has not been without hitches. Advancements in the application of HIA have been hindered primarily because of the lack of consistency in the available methodological approaches, and most researchers in the field have frequently identified the need for more prescriptive guidance (Fehr, 1999; Briggs, 2008; Forastiere *et al.*, 2011; Negev *et al.*, 2013). Reports from government agencies provide most of the available methodological guidance with limited input from independently researched works (Health Canada, 2004; Quigley, 2006; Bhatia, 2010; USNRC, 2011; Rhodus *et al.*, 2013; Ross *et al.*, 2014; McCallum *et al.*, 2015). The lack of a generally acceptable gold standard for the practice of HIA and the impact of this limitation on its effectiveness as a decision-making tool has been emphasised by various authors (Lock, 2000; McCallum *et al.*, 2015). Another factor that tends to

influence the viability of HIA as a decision-making tool is the level of involvement of stakeholders and decision-makers (Bourcier *et al.*, 2014). The increasing participation of major stakeholders, decision-makers, and community leaders tends to reduce the effects of a lack of standardised methodology for HIA practice. Such involvement enhances the core values of democracy, equity, sustainable development, and ethical use of evidence, which are the underpinning principles of HIA (WHO European Centre for Health Policy, 1999). The collective involvement of stakeholders also legitimises and enriches the output.

Given the dependability of HIA practices on tools generated from government-funded research, the developed world has consistently spearheaded the global development and practice of HIA (Birley, 2011; Chilaka and Ndioho, 2019). Like most developing countries, Nigeria tends to rely on generic tools designed specifically by developed states. There is, therefore, a need to contextualise some of these tools to meet local needs and regulations, especially given the increasing state of development in the country.

Most developing countries have two distinct but peculiar living conditions amongst their populace: the modernised urban dwellers and the poor rural dwellers. The urban areas are at a stage of construction, modernisation, industrialisation, and urbanisation, all in a bid to meet up with other developed cities of the world. The socio-economic developments in these areas lead to rapid environmental and lifestyle changes. They also come with population health challenges, which need to be commensurate with the existing health facilities. Over the years, researchers have emphasised an intricate association between environmental and lifestyle changes and human health (Curtis *et al.*, 2005; Quigley *et al.*, 2006; McMichael *et al.*, 2008; Wu *et al.*, 2011).

The rural communities in these developing countries live in subsistence conditions, with little or no infrastructure to support livelihood and no insurance or benefits to offset adversity (Birley, 2004; Wu *et al.*, 2011). They live in deplorable conditions with harsh economic challenges and are continuously faced with social, mental, and spiritual problems, which give rise to high rates of communicable diseases (Birley, 2004). Currently, Human Immunodeficiency Virus (HIV), which leads to acquired immunodeficiency syndrome (AIDS), Tuberculosis, and Malaria, are still prevalent in developing countries (Victoria *et al.*, 2009; WHO, 2010; WHO, 2022). These diseases,

which are commonly referred to as the 'world's major killers,' are found to be endemic in the developing countries of tropical Africa (WHO, 2022). This vulnerability to adverse population health conditions makes it necessary for health Impacts of all projects, plans, policies, or programmes of government and individuals to be considered by decision-makers.

In Nigeria, Environmental Health and Social Impact Assessments (ESHIA) and ordinary Environmental Impact Assessments (EIA) are the mainstay of the impact assessment practice (Abah, 2012; Nwoko, 2013; Raimi, 2020; Raimi *et al.*, 2020). Other impact assessment forms are embedded within ESHIA or practised minimally. HIAs (on their own) are not practised regularly within the region, although practitioners tend to argue that other EIAs cover health issues. The combination of various forms of impact assessments (health, environmental, social, and economic) in one impact assessment document, as practised in Nigeria, is often referred to as Integrated Impact Assessment (IIA). In Nigeria, just like most other parts of the world, the impact assessment process originated from the clamour for environmental protection. Therefore, the impact assessment process is mainly identified and referred to as Environmental Impact Assessment (EIA), although the process has been refined to incorporate other forms of assessments (Raimi *et al.*, 2020; Bouchoucha, 2021). EIAs involve the systematic assessments of likely environmental consequences of projects. They enable the policymakers to understand the environmental impacts of developmental projects before making decisions on their execution. In carrying out EIAs, emphasis should be on the objectivity of the process. Practitioners recommend utilising the best sources of objective and evidence-based resources using a systematic and holistic procedure.

The International Association for Impact Assessment (IAIA) defines EIA as:

The process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made" (IAIA, 1999:2).

Many authors have previously described EIA to cover the processes of identifying all impacts on the biophysical environments that affect man's health, welfare, and socio-economic well-being (Munn, 1979; Davies and Muller, 1983; Yusuf *et al.*, 2008;

Sheate, 2012; Glasson and Therivel, 2013; Galway and McKay, 2022). On the other hand, Strategic Environmental Assessments aim to provide information to guide policy and decision-makers on the possible environmental and social consequences of plans or programmes before decisions are made (Alshuwaikhat, 2005; Tian *et al.*, 2018).

The advocacy for EIA practice in the Nigerian Niger Delta was mainly aimed at addressing adverse impacts emanating from the extractive industries (Borasin *et al.*, 2002; Song *et al.*, 2011). As the process evolves, EIA has been used by policymakers for planning and development (Kakonge, 1998; Crabbe & Leroy, 2008; Glasson and Therivel, 2013) and for the promotion of sustainable development (Robert, 2004; Morrison-Saunders and Fischer, 2006; Duncan and Hay, 2007; Wanke, 2014).

Existing studies on the evaluation and implementation of EIA reports have failed to animate the lessons learned from reflecting on the processes and have been criticised for not giving life to everyday working projects or policies (McKie, 2002). Many researchers have argued that studies assessing policy failures or successes have been based mainly on inadequately robust analytical frameworks (Anderson, 1995; Powell and Maynard, 2007; Cousins and Shulha, 2006; Mark *et al.*, 2006). According to Dahler-Larsen (2006), earlier evaluation studies relied solely on quantitative methods and produced complex, difficult-to-understand results. Others have criticised such research for its statistical complexity. In this study, the researcher has tried to address these areas of criticism by providing some empirical evidence that is contextually relevant to the practice in the Nigerian Niger Delta region.

There is no naysaying that various explorative and production activities from the oil and gas sector have created various environmental, health, and socio-economic challenges (Echefu and Akpofure, 2002; Goodland, 2005; Nwoko, 2013). The continuous practice of gas flaring and incessant cases of oil spillage have gained global attention (Kloff and Wicks, 2004; Steiner, 2008). The risk of their reoccurrence remains high despite the government's promises to address the situation. According to the National Environmental, Economic and Development Studies (NEEDS) for climate change, the annual environmental cost of gas flaring in Nigeria amounts to 94 million United States dollars (USD) (PWC, 2019). The total economic loss to the Nigerian economy in 2018 was estimated to be 761.6 million USD, translating to about 3.8 % of the global loss from gas flaring (PWC, 2019). Oil spillage, on the other hand,

has continued to plague the region unabated (Chinedu and Chukwuemeka, 2018). According to Chinedu and Chukwuemeka (2018: 1),

The Niger Delta region is continuously exposed to a higher rate of oil spills, and about 3.1 million barrels of crude oil enriched in manganese (Mn), iron (Fe), copper (Cu), zinc (Zn), lead (Pb), nickel (Ni), cobalt (Co), cadmium (Cd) and chromium (Cr) were spilled from 1976 to 2014 in this region.

It is believed that the current state of agitation and civil unrest in the Niger Delta region is a direct consequence of these incessant environmental pollutions (Chinedu and Chukwuemeka, 2018). The Nigerian economy depends mainly on the exportation of petroleum products. Consequently, the fact that the exploration and production of petroleum is domiciled in the Niger Delta region explains why the people of the region feel that they bear the brunt of environmental degradation, hence the agitation for resource control. These agitations from various militant groups and the multiplier effects of oil spillage and gas flaring have affected the region's oil production level. Apart from the economic loss, these incessant conflicts have resulted in deaths, healthcare crises, and loss of societal cohesion. The earlier stated oil spillage and gas flaring cases also have health and social consequences. Nduka (2008:811) states that "oil exploration and other anthropogenic sources may be responsible for the acid rain in the Niger Delta region of Nigeria." The health concerns emanating from these environmental degradation and other impacts cannot be overemphasised. This research focuses mainly on the level of health coverage in ESHIAs, or EIAs as commonly called.

Concerning the environmental effects of developmental activities, it is essential to note that the Nigerian government has striven to tackle these issues through its federal and state agencies. The promulgation of the EIA Decree No. 86 of 1992 was an effort in this regard. It was aimed at achieving sustainable development and ultimately protecting the Nigerian environment, especially the Niger Delta region. Part 1, sections 1 and 3 of the Act stipulates that all development projects likely to have adverse environmental effects should consider the environmental consequences of such proposed projects in the form of an environmental impact assessment before implementation.

To ensure that more prudence is given to the environmental protection effort, the government has also established many bodies through which all environmental activities are regulated and enforced. Some of these bodies and agencies include the Federal Ministry of Environment (FMoE), Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA), Nigerian Upstream Petroleum Regulatory Commission (NUPRC), State Ministries of Environment (SMoE), the Nigerian Maritime Administration Safety Agency (NIMASA), and the National Oil Spill Detection Response Agency (NOSDRA). The FMoE, NMDPRA, and the NUPRC apply very similar EIA approaches, although the NMDPRA and the NUPRC focus only on oil and gas-related projects. The NMDPRA and the NUPRC represent the defunct Department for Petroleum Resources (DPR).

Despite the government's efforts in tackling environmental degradation, these problems persist in the Niger Delta. Such persistence may result from the intrinsic relationship between environmental challenges and societal problems (Sands, 2008; Crabbe and Leroy, 2008). The situation, therefore, calls for a holistic and integrative approach, which requires a comprehensive evaluation of policy formulation and implementation techniques. It also calls for strengthening the EIA process by assessing the strength of each component.

1.3 Research Rationale

This research focus is mainly motivated by the researcher's experience, quest for knowledge, and desire to help strengthen the practice of health impact assessment in Nigeria. The researcher has had the privilege of interacting with policymakers in the health sector, community dwellers, and health impact assessment practitioners. In his prior experience, while researching HIA practice in the region (Chilaka and Ndioho, 2019), participants had ascertained that the practice of health impact assessment was unpopular and needed more awareness creation and deliberate government intervention (Chilaka and Ndioho, 2019).

The researcher's lived experiences of having studied in the Niger Delta region as an undergraduate student enhanced his understanding of the health impacts that could emanate from the numerous exploration activities of oil companies. Despite the low level of awareness and the prevailing health impacts from oil exploration, health impact

assessment was presumed (by most regulators) as adequately covered in IIAs or ESHIAs commissioned by oil companies. This presumption aroused the researcher's curiosity to investigate whether integrating all impacts in one integrated document, as commonly practised within the country, has sacrificed health coverage. In addition to evaluating the level of health coverage in Environmental Impact Assessment documents, this research was motivated by the desire to improve and strengthen the impact assessment process in general and make novel contributions to the practice. His prior publication identified the implementation of recommended mitigations as a challenge in HIA practice (Chilaka and Ndioho, 2015). It therefore became necessary to include a detailed study of the implementation process and its challenges in this study.

While previous studies have focussed on the evaluation of the EIA processes, the system of practice, and the extent of practice (Olokesusi, 2000; Ogunba, 2004; Nwafor, 2006; Ameyan, 2008; Nwoko, 2013), this research has incorporated the evaluation of health coverage and the level of implementation of recommended mitigations from previously completed EIAs.

Nwoko (2013) identified inadequate implementation of mitigation measures and monitoring as one of the shortcomings of the EIA process. Jordan *et al.* (1998) suggested that the analysis of the implementation process in Nigeria can help identify policies' failures or successes. It is, therefore, necessary to elaborately evaluate the implementation and monitoring processes to ascertain the challenges and level of implementation of mitigation measures. This study also adds a different approach to assessing the EIA practice by systematically evaluating completed EIA reports to identify trends, peculiar challenges, and shortcomings.

Another area of novel contribution is the focus on health coverage in EIAs, which ultimately resulted in designing an evaluation tool for health component evaluation. Although many reports have evaluated the EIA process in Nigeria, as stated above, little attention has been given to the extent of health coverage and its implementation in these reports. The practice of HIA in the region as a component of EIA is yet to be evaluated elaborately. A previous study by this researcher, which focussed on an independent HIA as a standalone document, identified various constraints to HIA (Chilaka and Ndioho, 2015). Recent improvements in the EIA process in Nigeria have

recognised the need for integration, thereby creating an independent component for health impact within the EIA document. This study evaluates the process of integrating health as a component of EIA and its significance in enhancing the goals of EIA in the region.

The study also contributes to the impact assessment process by evaluating the screening process and designing a contextually relevant HIA screening tool for use in the region. It identified the challenge of abandoned projects and recommended its inclusion as a factor for consideration when carrying out the screening exercise.

The regulatory agencies and other stakeholders are expected to study the challenges identified in this research to transform their implementation strategies (Dahler-Larsen, 2006; Mark *et al.*, 2006). The outcome of this research would add to Robert's (2004:3) suggestion that all stakeholders in the sector could "act in ways which do not generate environmental problems, or which generate problems with lesser significance than was previously the case." The researcher believes that if the regulatory agencies and other stakeholders in the ESHIA process adhere to the policies, many environmental degrading activities would be reduced, and the attendant conflicts in the Niger Delta region would also be reduced (Adinna and Attah, 2003).

This research's recommendations will help enhance institutional growth and societal cohesion, improve host community and operating companies' interrelations, and boost overall environmental and economic development. The research outcome will also be relevant to the government of Nigeria and the learned academic community. It will serve as a veritable resource for future researchers in the field.

1.4 Research Aim

To evaluate the use and implementation of Integrated Impact Assessment and improve the process in the Nigerian Niger Delta region with special reference to Health Impact Assessment.

1.5 Objectives

- ❖ To develop and validate an evaluation tool/checklist for assessing the content and quality of Integrated Impact Assessment, especially in relation to the health content.
- ❖ To identify relevant and recent Integrated Impact Assessments carried out in the Nigerian Niger Delta region.
- ❖ To appraise the identified Integrated Impact Assessments (for content and quality) using the developed tool specifically designed for assessing the quality and health content of completed Integrated Impact Assessment.
- ❖ To develop guidelines and propose a framework for improving health integration in Environmental Impact Assessment and enhance Health Impact Assessment in the Nigeria Niger Delta region.

1.6 The Structure of the Thesis

A constructivist philosophical viewpoint underpins this research. The research objectives required various methods to address the issues it raises. Consequently, a sequential exploratory mixed-method approach was used (Creswell and Plano Clark, 2017; Johnson and Onwuegbuzie, 2004). This approach means using the most appropriate method for each research phase. It started with an exploratory qualitative approach, leading to integrating all results for the final discussion. This thesis presents a detailed and comprehensive documentation of all activities, methods, and analyses involved in the research.

The application of various methods suggests the systematic application of a sequence of events that led up to the achievement of the study objectives; hence, the thesis is divided into multiple chapters as follows:

Chapter One introduces the thesis and provides a background to the study. It states the research aim and objectives and further explains the research structure. It also provides the rationale for the research and highlights its significance.

Chapter Two introduces the region's theoretical context for health impact assessment practice. The chapter discusses the theories and practices of health impact

assessment and presents a snapshot of available health infrastructure within the study area.

Chapter Three identifies the subject of the study and some aspects of the literature that best explain the concepts behind the study. It reviews the practices of environmental impact assessment in the country as a whole and the Niger Delta region. The chapter also delves into various theoretical viewpoints in evaluation studies and policy implementation. The interrelationships between various theoretical stances in evaluation studies and the need for contextualisation and integration are appraised.

Chapter Four describes the overall methodological approaches or strategies adopted in conducting the research. It is sub-divided into four sections to cover the four studies undertaken during the research. The subdivisions are as explained below:

- ❖ Study one involved the systematic review of available HIA guidance documents to identify gaps and generate evidence that helped establish HIA's values. It established the background for developing a checklist or tool for evaluating the level or quality of health coverage in Integrated Impact Assessment (IIA) documents.
- ❖ Study two systematically developed a screening checklist for Health Impact Assessment (HIA) that is contextually designed to address peculiar regional health issues.
- ❖ Study three involved the identification and evaluation of Integrated Impact Assessment (IIA) reports published within the Niger Delta Region between 2007 and 2018. The study used a systematic literature search approach where both scholarly and grey literature were accessed. The identified IIA documents were charted and refined utilising appropriate inclusion/exclusion criteria. A further assessment of the refined samples utilised the previously generated tool to evaluate the documents based on a ranking of good or bad practice principles.
- ❖ The fourth and final study involved a qualitative interview conducted in the community where one of the previously evaluated EIAs occurred. As stated earlier, the researcher used the good and bad principles to select the chosen EIA and used the highest-ranked EIA for the study. The study involved a semi-structured interview with the community dwellers within the chosen community. Interviewees also included Impact assessment practitioners within the region.

Chapter Five presents the results of studies 1,2 and 3. Separate subheads present each study's result, and the chapter ends with a chapter summary.

Chapter Six presents the results of study four. It started with an introduction and further identified the themes used in analysing the data. Separate subheads present the themes and detailed results under each theme.

Chapter Seven is the Discussion Chapter. It presents the discussion for the overall research and describes the research outcomes. The chapter discusses the role of screening in impact assessment, as evaluated in study one. It espouses the need to contextualise screening tools to align with the region's peculiarity. The core principles of HIA, as evaluated and established in study two, are further discussed in this chapter. The results of study three, as presented in chapter five, are also discussed, as well as the overall outcome of the interview process undertaken in study four. The chapter ends with the presentation of a proposed framework for integrating health in Integrated impact assessment. It presents some proposals for the overall improvement of the Integrated impact assessment process in the region.

Chapter Eight concludes the research and presents a summary of recommendations and areas of contribution to existing knowledge. It also identifies areas where further research may be necessary and gives insights into lessons learnt from the research.

CHAPTER TWO

The Concepts of Health Impact Assessment

2.1 Introduction

This chapter presents the region's theoretical context for health impact assessment practice. It starts by introducing the concepts of health impact assessment and the relationships between human health and its surroundings. The chapter discusses the determinants of health and the fundamental principles that govern the practice of HIA. The chapter covers the procedures and methods for conducting quality HIAs and their benefits.

This research views HIA as a policy tool that can guide policymakers and other practitioners with the sole aim of preserving the environment and promoting population health. It is essential to understand the national context for HIA and EIA applications and, by extension, their application in the region to achieve this research aim effectively. In this chapter, Health impact assessment, its theories, and practice are introduced and discussed. Finally, the chapter discusses the relationship between human health and environmental activities within the study area (Table 2.6). It further gives a snapshot of available health infrastructure within the study area. More detailed background information on the study area, its geographical location, economy, biophysical characteristics, and impacts of environmental degradations are presented at the end of this report as Appendix K.

2.2 Health Determinants and HIA Practice

Health impact assessment, as introduced in the background of this thesis, is a combination of processes and methods aimed at assessing the potentially significant effects of most human activities on population health (WHO, 2022). HIA can help relevant stakeholders and decision-makers to make decisions that best prevent ill health, reduce health inequalities, and promote good health.

The underpinning principle behind HIA practice is that several determinants influence human health, including and beyond some lifestyle factors (Quigley *et al.*, 2006). The World Health Organization (WHO, 2010) identified some of these determinants: the

social and economic environment, the physical environment, the person's characteristics and behaviour, and institutional factors.

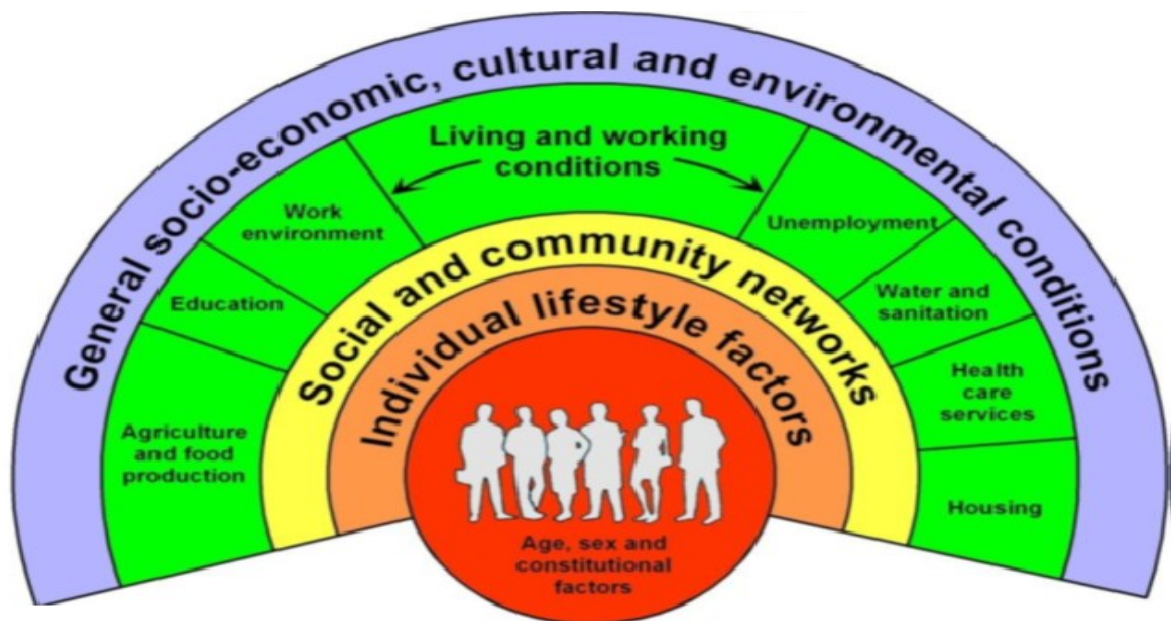
A broader perspective of the determinants of health is shown in Table 2.1 and Figure 2.1. Government's policies and programmes at all levels greatly influence these key determinants of health. It, therefore, becomes necessary to integrate health considerations in every policy and programme of government. Integrating health considerations could be done by assessing the possible health effects of these decisions, policies, and programmes to avert the adverse health consequences that may occur thereafter.

Just as the existence of diverse health determinants provokes the use of HIA, the root is derived from a broad spectrum of disciplines, amongst which are the need to appraise and promote Healthy Public Policy (HPP) and other Impact Assessments, e.g., Environmental Impact Assessment (Kemmm and Parry, 2004b).

Table 2.1: The Major Determinants of Health

Source: Source: Birley, 2011

| Principal Categories | Sub-Categories | Examples of Health Determinants |
|-----------------------|------------------------------|---|
| Individual/ Family | Physiological | Age, Nutritional status, disability, sex, immunity, ethnicity, and genetics. |
| | Behavioural | Risk-taking behaviour, e.g., Smoking, drinking, occupation, risk perception. |
| | Socio-economic Circumstances | Poverty, unemployment, education, social status |
| Environmental | Physical | Air, water and land, traffic, pollution, noise, dust, changes to the natural environment, flaring, light, water use, land take, housing, crops and food, vectors. |
| | Social | Family structure, community structure, culture, crime, gender, inequality. |
| | Economic | Loss of employment, investment. |
| Institutional | Organisation of Health Care | Primary care, specialist services, increased pressure on Health care, access to Health care, availability of drugs, quality of care, access to Education |
| | Other Institutions | Police, Transport, Public works, municipal authorities, local Government, Project sector ministry, local community organisations, NGOs, emergency services, |
| | Policies | Regulations, jurisdictions, laws, goals, thresholds, priorities. |



(Source: Dahlgren and Whitehead, 1991)
Figure 2.1: Socio-Environmental Model of Health showing the general determinants of Health.

2.2.1 Health Determinants

Several factors influence our health and well-being (Quigley *et al.*, 2006; Birley, 2011). These factors include personal, social, cultural, economic, and environmental factors. They include our physical environment, income, employment, education, social support, and housing (Birney, 2011). Table 2.1 further shows a detailed breakdown of its components and subcategories.

The relevance of HIA as a tool for enhancing proper population health status is further heightened by the acknowledgment of health as being influenced by varying determinants. The overarching importance of general socio-economic, cultural, and environmental conditions, housing and working conditions, social and community influences, as well as the influence of income distribution on general population health has been emphasized (Hertzman *et al.*, 1994; Whitehead, 1995; Wilkinson, 1996; Kemm and Parry, 2004a). It is such acknowledgements that led to the use of such terms as 'atomistic fallacy' (Marmot, 1998) and 'individualistic fallacy' (Krieger, 1994), which describe as futile, the tendency to isolate the understanding of human health

from a consideration of the communal context within which they exist (Kemmm and Parry, 2004a).

2.2.2. Fundamental Principles of HIA

Some basic principles and values govern the Processes of HIA. This is acknowledged by much of the literature, which therefore makes HIA not value-free (WHO European Office for Europe, 1999; Kemmm and Parry, 2004a). The Gothenburg consensus paper states four significant values of HIA: democracy, equity, sustainable development, and ethical use of evidence. However, these four values are an addition to the goal and value of HIA, which is the promotion of the maximum health of the population via a comprehensive approach to Health (WHO European Office for Europe, 1999; Kemmm and Parry, 2004a; Quigley *et al.*, 2006; Birley, 2011). It is important to note that HIA should contribute to good governance and remain robust while reflecting a socio-economic model of health.

2.2.2.1 Democracy

The value of democracy emphasizes the participatory right of the people in formulating, implementing, and evaluating policies and programmes that affect their lives. They can do this by direct involvement or in a representative capacity through their representatives. Stakeholders or their representatives are often included in dialogue through focus or advisory groups and workshops. These participatory processes are often done transparently and have often been known as little democracies (Clark and Claxton, 2006), where people have the right to know about the process and express their opinions and thoughts. It is usually a learning experience about the process (Kemmm, 2007). The benefits of transparent, participatory involvement include an accurate prediction of impacts, improved decision-making, increased transparency, and local accountability. It also resolves social conflict and promotes social cohesion, making the public aware of the potential impacts of projects and policies on health, which may lead to changes in attitudes and behaviours (Parry and Wright, 2003; Ståhl *et al.*, 2006). Setbacks to this approach include the marrying of disagreement between technical experts and citizens (Kemmm and Parry, 2004b), marrying of differences between political representatives, public officials, and citizens (Kearney, 2004), cost and time consumption (Parry and Wright, 2003; Parry and

Kemm, 2005), and difficulties in choosing correct representatives of the people (Wright *et al.*, 2005).

2.2.2.2 Ethical Use of Evidence:

Ethical use of evidence emphasises the rigorous use of quantitative and qualitative evidence that are based on scientific disciplines and methodologies to get a comprehensive assessment of the expected impacts (WHO European Office for Europe, 1999). It is said to be desirable but begs the question of what evidence is (Kemm and Parry, 2004b). Three basic types of scientific evidence are usable in HIA:

- Review of earlier published evidence on the potential impact of the same type of policy, programme, or project on the affected people's health.
- Production of a new prediction of the proposal's impact by quantitative research methods.
- Production of a new prediction of the proposal's impact by qualitative research methods” (Nordic School of Public Health, 1999).

Although a bias towards concentrating only on the quantitatively measurable determinants and risks may produce a narrow scope for the potential impacts of the proposed policy, leaving significant impacts out of the analysis (Milner *et al.*, 2003), evidence presented in quantitative terms may often be more convincing to decision-makers than the results of a qualitative study (Veerman *et al.*, 2005). Ethical use of Evidence as a value of HIA involves the rigorous use of the highest scientific standards and criteria to select and judge evidence without neglecting evidence based on its ability to fit into the argument (Kemm and Parry, 2004a).

2.2.2.3 Equity

Equity as a value of HIA guides the investigation of impacts by looking at the distribution and intensity of impacts on different population groups. It highlights the aggregation of impacts (for equity) within the population based on protected characteristics such as gender, ethnic nationality, age, and socio-economic status (WHO European Office for Europe, 1999). Equity considerations as a value of HIA ensure that potential health impacts of development/policies are equitably distributed amongst various population groups. It protects vulnerable population groups from

being overburdened by potential health impacts. According to Douglas and Scott-Samuel (2001: 7),

HIA should explicitly consider the impacts of inequalities in health, to explore and analyse different consequences for different population groups, and decision-makers should be enabled to judge the trade-offs between the different policy alternatives.

HIA, therefore, is a valuable tool in addressing health inequalities.

2.2.2.4 Sustainable Development

Sustainable development allows the ability to consider the short and long-term impacts of proposed developments. It also encourages both direct and indirect impacts to be considered. Sustainability often applies to environmental HIA or similar urbanisation projects and has not been a priority focus of HIA studies (Mannheimer *et al.*, 2007).

2.2.2.5 Comprehensive Approach to Health

This value of HIA emphasizes that the total Health and well-being of the populace is influenced by factors known as the broader determinants of Health. It, therefore, ensures that HIA methods and procedures reflect the socio-economic model of health and are guided by these determinants of Health (Quigley *et al.*, 2006). It recommends adopting a holistic approach to health considerations, which means considering all the determinants of health when assessing potential health impact.

2.3. Aims of HIA

HIA could be seen as a decision-making tool that uses a multidisciplinary process to ensure that impacts on health and health inequalities are explicitly considered in decisions that affect a population (Ahmad *et al.*, 2008). A primary intent of the process is to encourage decision-makers to consider the health consequences of their decision and to minimize or eradicate, if possible, the risk of population health being damaged through some indirect and unintended consequences of a decision (Taylor and Quigley, 2002).

Consequently, the AIMS of HIA could be summarised as follows: The first is to improve knowledge about the potential health impacts of policies, projects, and programmes on a given population by thoroughly assessing, identifying, and putting forward (to all stakeholders) all the positive and negative potential health impacts (WHO European Office for Europe, 1999; Scott-Samuel *et al.*, 2001). The second is to improve the overall quality of public policy decision-making through recommendations that will help facilitate the adjustment of the proposed policy to mitigate the negative impacts while maximizing the positive ones. (WHO European Office for Europe, 1999; Scott-Samuel *et al.*, 2001).

2.4 Types of HIA

The categorisation of HIAs can be done using two different perspectives. One approach considers the scope and coverage of HIA, while the other considers the temporal relationship of the HIA to the intervention being assessed. Table 2.2 shows the various classifications of HIA and their characteristics.

Table 2.2 Classification of HIA and their Characteristics (Source: Adapted from Birley, 2011)

| Criteria for Categorisation | Types | Characteristics |
|--|------------------|---|
| Temporal relationship (time with regards to the stage of the intervention) | Prospective | <ul style="list-style-type: none"> Carried out before the implementation of the policy, programme, or project. Predicts the consequence before it has been implemented. Leads to the prediction of the consequences and the subsequent modification of decisions to mitigate harm and maximise health (Kemmer and Parry 2004a) |
| | Concurrent | <ul style="list-style-type: none"> Runs concomitantly with the project implementation. Monitors situations and identifies and describes the consequences of an intervention as it is implemented. Preventive measures and/or modifications can be introduced early in the event of an unbearable impact increase. |
| | Retrospective | <ul style="list-style-type: none"> Identify consequences or impact of projects that have already been implemented. Provides information on the relationship between interventions and their consequences, which serves as an essential data source for prospective HIA |
| The scope, capacity, or | Rapid or Desktop | <ul style="list-style-type: none"> Provides a broad overview of possible health impacts. Analysis of existing and accessible data. |

| | | |
|---------------------|---------------|--|
| coverage of the HIA | | <ul style="list-style-type: none"> • No new primary data collection • Minimal resource requirement • Shorter time requirement (Approximately days) |
| | Intermediate | <ul style="list-style-type: none"> • More detailed information on possible health impacts. • Analysis of existing data • Stakeholders and key informant analysis • No new primary data collection, but it could sometimes lead to the generation of new ideas. • Moderate resources required. • Moderate time requirement (approximately weeks) |
| | Comprehensive | <ul style="list-style-type: none"> • Provides a comprehensive assessment of potential health impacts. • Robust definition of impacts • New primary data collection • Participatory approaches involving stakeholders and key informants. • Requires Community/Stakeholder interactions and fieldwork, which subsequently needs more time and resources (Approximately Months) |

2.4.1 Classification based on scope and coverage:

This approach considers the scope and coverage of HIA. It classifies HIA based on the depth to which health issues are analysed. The depth or scope also aligns with the time and resources invested in the HIA. Subsequently, based on this approach, HIA could be categorised as Rapid, Intermediate, and Comprehensive. The Rapid HIA is considered the lightest in scope and attracts the least level of resource input, while the comprehensive HIA attracts the highest level of resource input and is the most detailed and in-depth.

Some authors classify HIA as having a Comprehensive approach and a Rapid Appraisal approach, with the Rapid Appraisal HIA being subdivided into a Desktop HIA and a limited in-country HIA (IFC, 2009). However, the terminology, the proposed content, and the scope of the desktop and limited in-country HIAs are similar to that of the Rapid and Intermediate HIAs, respectively.

Rapid HIA involves a brief investigation of health impacts and often utilises readily available data. It is carried out quickly with minimal resources and is often a qualitative review of potential health impacts. It can be used internally to provide feedback and

discuss the proposed design of a project. It could also determine whether a more detailed review is needed. The outcome of the Rapid HIA may be the definition of the scope of a comprehensive HIA (IFC, 2009).

Intermediate HIA is more elaborate and requires a more detailed investigation of potential health impacts using mainly available evidence gained from similar HIAs or other environmental/community assessments. Information for such assessments is often sourced from 'grey literature' such as literature from health departments or scientific peer-reviewed sources. However, only some intermediate HIAs come as a stand-alone report and may or may not require an engagement of the community. The features of the Intermediate HIA are, however, similar to those of the Limited in-country HIA (NACCHO, 2008; IFC, 2009)

Comprehensive HIA involves detailed investigations using a community-based collaborative process. It reviews the available evidence and collects and analyses new information, generating new data. It is recommended for policies, projects, and programmes with significant potential health impacts.

2.4.2 Classification Based on The Temporal Relationship with The Project.

This approach considers the HIA's temporal relationship to the intervention being assessed. To this end, HIA can also be classified as prospective, concurrent, and retrospective. The time of conducting the HIA is therefore considered and compared with the stage of development or implementation of the project, plan, or policy.

Prospective HIA comes before policy, programme, or project implementation. It attempts to predict the consequences before project implementation. Most authors equally address it as outcome evaluation, while most literature on policy appraisal considers it ex-ante (Kemmer and Parry, 2004a). Practitioners highly recommend prospective HIA as it greatly satisfies the aim of HIA, which involves the prediction of consequences and the subsequent modification of decisions to mitigate harm and maximize health (Kemmer and Parry, 2004a).

Concurrent HIA runs concomitantly with the project or programme implementation. It attempts to monitor situations and identify and describe the consequences of an intervention concurrently. Monitoring the implementation process allows the early

introduction of preventive measures or modifications in case of any unbearable increase in impacts. Most literature refers to it as monitoring or surveillance.

Retrospective HIA attempts to identify the consequences of a programme or policy already implemented. It provides knowledge and information on the relationship between intervention and their consequences, which forms an essential data source for prospective HIAs.

2.5 Procedures and Methods for Carrying Out HIA

Some prototype methodologies and procedures guide the proper assessment of health impacts; however, it is essential to note that they are often a general overview of the HIA process and may require adaptation to suit the projects, programmes, or policies under review. In practice, various factors influence the methods used in conducting HIAs. These include:

- a) The type of intervention (e.g., programme, project, or policy),
- b) The primary focus or target of the HIA (e.g., policymakers or participatory involvement)
- c) The context to which the HIA will be applied (e.g., whether embedded in other impact assessments or stand-alone) (Kemmer and Parry, 2004).

A clear distinction exists in using the word; "Methods and Procedures." Procedures consist of actions before, during, and after the assessment, and methods are the systems of carrying out these actions (Birley, 2011; Scott-Samuel *et al.*, 2001). Procedures consist of the framework for commissioning and implementing HIAs (Scott-Samuel *et al.*, 2001), which includes the following steps: screening, appraisal, or assessment, developing recommendations, negotiation of favoured options, implementation, implementation, monitoring, and evaluation. Table 2.3 shows an overview of the HIA procedures, while Fig 2.2 shows a flow chart of the procedures and methods.

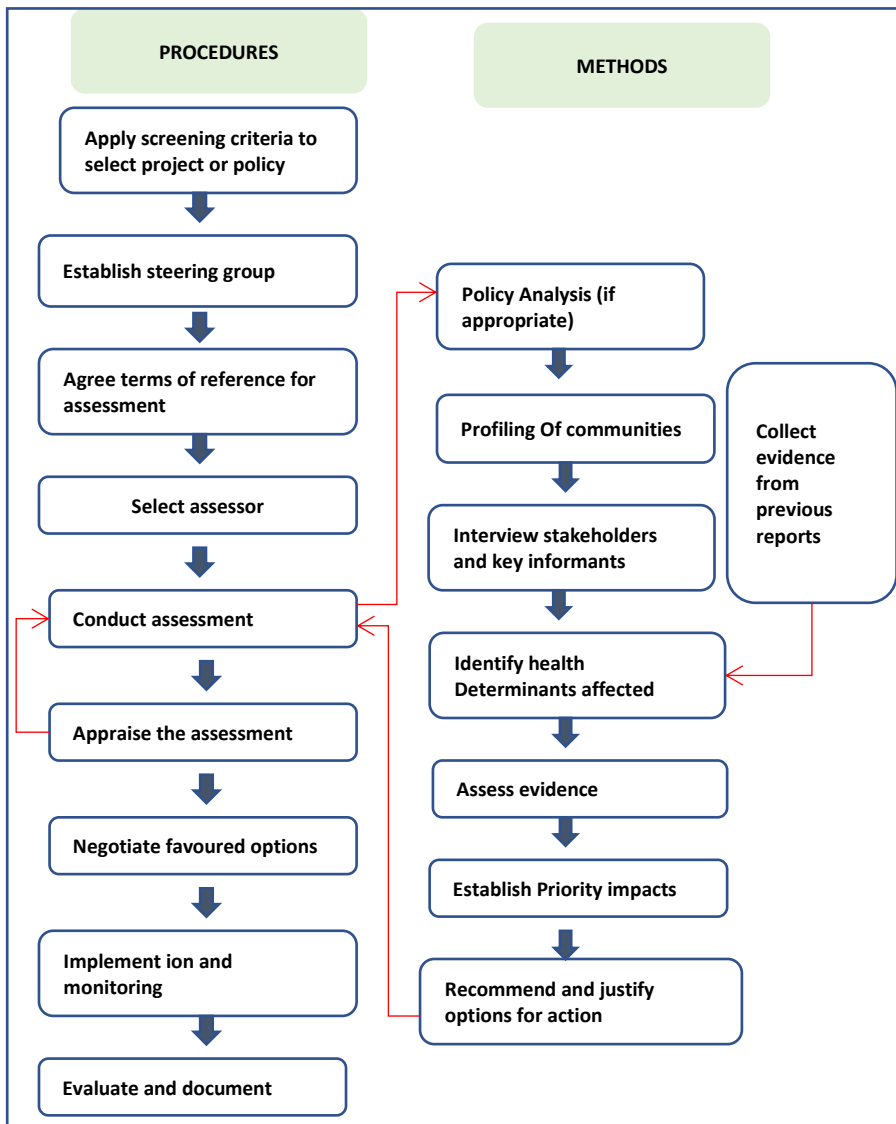


Figure 2.2: Stages in the HIA process
 (SOURCE: Adapted from Scott-Samuel, *et al.*, 2001:6; WHO, 2022: Online)

2.5.1 Procedures for HIA

As noted above, the following are the frameworks for commissioning and implementing HIA: screening; appraisal, or assessment; developing recommendations; negotiation of favoured options; and implementation, monitoring, and evaluation.

Table 2.3: Summary of HIA Procedures

Sources: Adapted from Birley, 2011

| Screening | Identify if the project should be subjected to HIA |
|--|---|
| scoping | Deciding how to undertake HIA and establishing a practical foundation for assessment. Key tasks include: <ul style="list-style-type: none">➤ Identifying issues to be addressed in the HIA➤ Identifying how and by whom the process would be overseen➤ Identifying the skills and human resources required.➤ Setting up a steering group and outlining the TOR |
| Appraisal or Assessment | Identifying a range of evidence for potential impacts on health and equity. It involves the following tasks: <ul style="list-style-type: none">➤ Examining the proposal,➤ Collecting and collating evidence➤ Appraising impacts➤ Reporting on the impacts |
| Developing recommendations | It involves deciding on and prioritising specific recommendations for decision-makers. The aim is to maximise positive impacts and exterminate negative health impacts. <ul style="list-style-type: none">➤ Recommendations should be useful and practicable.➤ It should be timely and fit appropriately into the project and decision-making cycle. |
| Negotiation of favoured options | This involves the negotiation of favoured options and further engagement with decision-makers. |
| Implementation, monitoring, and evaluation | <ul style="list-style-type: none">➤ Outcome evaluation➤ Process evaluation➤ Impact evaluation |

2.5.1.1 Screening:

Screening is a preliminary evaluation done to determine if a project, programme, or policy requires a Health Impact Assessment (HIA). The assessment is done to justify whether an HIA is necessary or not. Screening identifies projects that have significant health impacts and should be subjected to an HIA. During screening, economic outcomes and epidemiological issues are considered. In summary, the result of the screening process provides information on the following:

1. Whether the proposal is likely to impact on health.
2. Which sections of the population, particularly vulnerable groups, are likely to be affected?
3. The possible scale of the impacts and whether these are likely to be positive or negative.
4. Determine whether a rapid or in-depth HIA is needed (CISHE, 2004).

Table 2.4 shows some of the issues to be considered when carrying out the screening procedure, and Table 2.5 shows the processes involved in the screening exercise.

Table 2.4: Issues for consideration when carrying out the Screening procedure for HIA
Source: Scott-Samuel *et al.*, 2001

| Issues considered | Illustration |
|------------------------|--|
| Outcome issues | <ul style="list-style-type: none"> ➤ The size of the project and the population affected. ➤ Cost of the project and impact distribution |
| Outcome issues | <ul style="list-style-type: none"> ➤ The nature of the potential health impact of the project (crudely estimated). ➤ The likely nature and extent of distribution of impacts ➤ The existence of potential cumulative impacts |
| Epidemiological issues | <ul style="list-style-type: none"> ➤ The degree of certainty (risk) of health impacts ➤ The likely severity of potential health impacts ➤ The size of any probable health service impacts ➤ The likely frequency (incidence/prevalence rates) of potential health impacts. ➤ The likely consistency of experts and community perceptions of probability (i.e., risk) and the frequency and severity of important impacts (this could be described via a simple metric). The greater the likely consistency, the greater the need for HIA. |

Table 2.5: Processes Involved in the Screening Procedure

Source: Adapted from CISHE, 2004

| STAGE | INVOLVEMENT |
|----------------------------------|---|
| Identifying the process involved | It is often more than a desktop exercise conducted by one person. It involves a short meeting or individual discussions. Inputs are obtained from public health professionals, relevant experts, and representatives of key stakeholder groups. |
| Preparation | A clear discussion of the proposal and its rationale, aims, and objectives are often laid out before the involvement of other stakeholders. A basic profile of the people living in the population area likely to be affected is often laid out and circulated to all participants in good time before the meeting. |
| Recording the information | The health impact assessment screening or appraisal tool provides a means of recording the information behind every decision. This is important as it will be helpful if a justification is needed regarding why a health impact assessment was not carried out. |

2.5.1.2 Scoping:

The scoping stage marks the determination of the focus and scope of the HIA. The methods and action plans are designed at this stage (CISHE, 2004; National Assembly of Wales, 1999; Birley, 2011; Scott-Samuel *et al.*, 2001). At this stage, boundaries are set in time and space for the assessment, and the terms of reference (TOR) are formulated for a full-scale HIA (Quigley *et al.*, 2006). Fig 2.3 shows "the scoping questions," which are examples of the preliminary questions often answered during the scoping process. Scoping relies on inputs from the screening report, proposal information, and stakeholders' opinions and, in turn, gives out a comprehensive report and a guide for additional work as outputs (Birley, 2011). The scoping procedure sets the stage for the actual HIA. It involves the taking of decisions on the following issues.

1. **Time Boundaries:** These ensure that considerations are given to the timeframe of the proposal (policy, project, or programme) in order to ensure that the HIA can influence the proposal by aligning with the decision-making timescale of the proposal (CISHE, 2004). Also, the time boundaries between the various stages of the proposal are considered, and focus is given to the varying nature of health impacts between these stages. The various stages of activities for a typical project include design, construction, operation, and decommissioning (Birley, 2011).
2. **Geographical boundaries:** This is where potential impacts could be felt. The scoping stage ensures that the assessment's geographical boundaries (area of influence) are well-defined. Some impacts may impinge on populations beyond those directly affected by the proposal, so the boundaries are often decided to cover these areas.
3. **Stakeholders:** Stakeholders comprise different community groups and related organisations (Birley, 2011). They are mainly those likely to be affected by or involved in the development or implementation of the proposal. A decision on how they should be involved in the process is often taken at the scoping stage. They sometimes serve as providers of expert evidence, as steering group members, or as report recipients (CISHE, 2004). The stage involves Key decision-makers or their representatives, who ensure that they carry everyone

along during the process. The involvement of key decision-makers further facilitates the implementation of the HIA's recommendations in the long run.

4. **Focus:** This means that the scoping stage also helps to identify, prioritize, and focus on areas of most significant importance. Scoping decisions on the focus of the HIA involves the identification of health impacts with the highest degree of potential impacts and with the greatest likelihood to occur. It also assesses the population group that will most likely be worst affected. It helps ensure the best use of minimal resources by focusing on the most affected areas.
5. **Resources:** This involves assessing what resources are available in terms of additional funding and people's time. It may also involve the development of an approach that makes the best use of the available resources.
6. **Scale of assessment:** This depends on the timescales, the resources available, and the project's complexity. The information from the screening process is needed to make the scaling decision. Decisions on what to cover in the assessment and appraisal report are taken (CISHE, 2004).
7. **Steering group:** Although this is not a mandatory requirement, depending on the type of assessment, it can provide an effective means of task distribution. It can also promote broader participation and ownership of the process. The group often comprises people with specific knowledge in the area of interest. Community representatives may have insights as to how proposals will affect local people. Specialists and other stakeholders with specialized knowledge in the social sciences, epidemiology, environmental health, or health economics may be used to form the group.
8. **Data Mapping:** This involves gathering information from relevant literature on the issue. This literature adds to the evidence base of the process. Literature could be sourced from recent policy statements, health data, and primary or key informants (Birley, 2011).

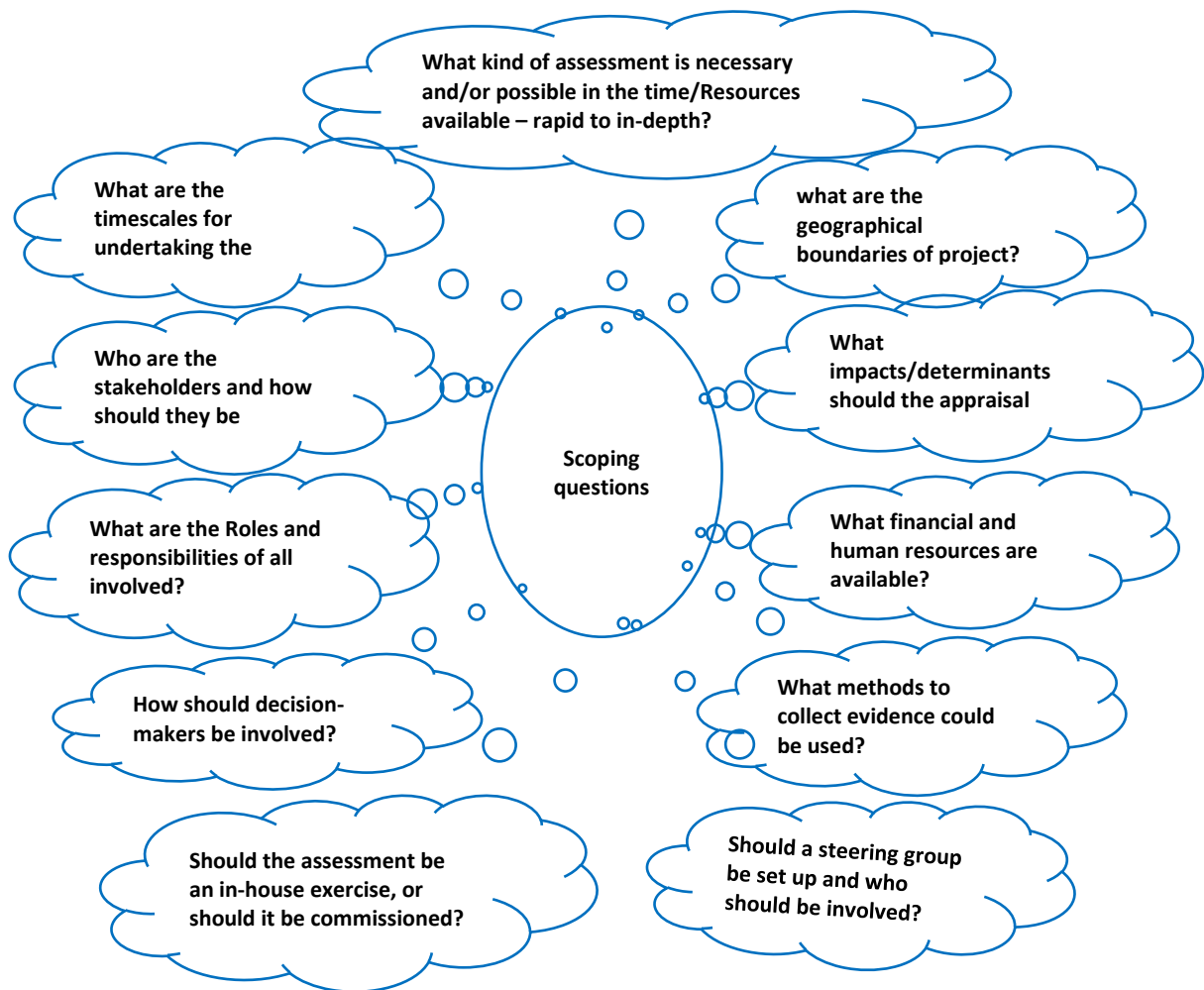


Figure 2.3: Scoping Questions (source: Author, with data from CISHE, 2004)

2.5.1.3 Assessment or Appraisal

At this stage, the potential health impacts are assessed and fully established. The evidence should be critically established, and their potential impacts on health and equity assessed. It involves examining the proposal, collecting and collating the evidence, appraising the impacts, and reporting on them.

Collating and using the Evidence: Evidence for HIA can come in diverse forms; however, every undertaking depends on available evidence. Experts' opinions on the existing population and the broader literature can serve as the source of evidence. In most cases, the type of impact assessed determines what constitutes acceptable evidence. For instance, a measurable impact will need quantitative evidence, while

impacts that cannot be measured can go with qualitative evidence that explores people's experiences, perspectives, and feelings (CISHE, 2004). Information on the Local Authority's directory on the needs and characteristics of the local population will be a valuable source of evidence (Scott-Samuel *et al.*, 2001). The focus should be on evidence of 'what works' and on knowledge and understanding of factors that affect people's health and well-being (Kemmm, 2000).

Appraising the Impacts: This is the process of carrying out a detailed risk assessment of the proposal by evaluating all potential impacts. Impact appraisal should be done by thoroughly assessing the following concepts.

- i) The scale, nature, and magnitude of the impact in terms of the degree and proportion of the population that is likely to be affected.
- ii) The probability of the impact occurring. i.e., if the chances for the impact to occur are definite, probable, or speculative.
- iii) The timing of the impact, i.e., if the impact is short-term and if the short-term impact is worth the long-term benefits.
- iv) The distribution of the impact in terms of how many and which people will be affected. This tries to check imbalances in impact distribution and proffers ways of helping the least healthy population (Scott-Samuel *et al.*, 2001; CISHE, 2004).

3. Reporting: This is the formal presentation of information gathered at the assessment stage to the intended audience. At first, the information should be collated and presented in an accessible form to the intended audience. Many possible formats of presentation exist, ranging from a simple list or matrix of the findings to a more comprehensive report. The report's format and style need to consider the target audience(s).

2.5.1.4 Developing Recommendations

After completing a detailed appraisal, the next stage is to explore means of maximising potential improvements in health and minimising potential health risks. This is done by deciding on and prioritising specific recommendations for decision-makers. The aim is to maximise positive health impacts and mitigate any negative impacts. Such

recommendations should be helpful, practicable, timely, and properly fit into the project and decision-making cycle. Stakeholders and experts are involved in this process to ensure that the recommendations are feasible and acceptable.

2.5.1.5 Negotiation of Favoured Options

Political differences between stakeholders and some other shortcomings often result in a non-adoption of the recommendations despite how lofty they might be. The possibility of such differences makes undertaking a formal option appraisal imperative. Achieving agreement on options for mitigating or enhancing predicted health impacts may require skilful negotiation on the part of those involved (Scott-Samuel *et al.*, 2001). This, however, is the challenge of the steering committee and its leadership.

2.5.1.6 Implementation, Monitoring and Evaluation

The usefulness of the HIA report depends significantly on how it is being implemented or accepted. This stage involves implementing the report's recommendations and observing and monitoring the consequences (CISHE 2004). Evaluation comes after HIA has been accepted, management plans agreed on, and implementation started (Birley, 2011). Monitoring and evaluating the implementation is a feature of a good HIA (Taylor and Stevens, 2002). It can help those involved to improve the HIA process, modify future proposals to achieve health gains, ascertain the degree of implementation of recommendations, and measure the accuracy of predictions made during appraisal. The various forms in which a typical monitoring and evaluation procedure could be undertaken are listed below (Birley, 2011; Taylor and Stevens, 2002).

1. **Process evaluation**, which assesses how successful the Assessment was. It evaluates the usefulness and successes of the process. It also considers the appropriateness of all those involved (Kemmm, 2007; Birley, 2011; Taylor and Stevens, 2002).
2. **Impact evaluation** monitors the acceptance and implementation of the recommendations and seeks to find the reason behind any rejection (Kemmm, 2007; Birley, 2011; Taylor and Stevens, 2002).

3. **Outcome evaluation** monitors health indicators to measure the actual effect of the implementation process. It seeks to determine whether the implementation enhanced good health and well-being and reduced the negative impacts. It also tries to discover the reason behind any failure if there is no resultant positive outcome (Mindell *et al.*, 2003).

2.5.2 Methods of Carrying Out HIA

The step-by-step actions carried out during the process of HIA require a systematic approach. The system of carrying out these actions is what is known as the Method. According to Scott-Samuel *et al.* (2001), it involves policy analysis, profiling of affected communities, and involving stakeholders and key informants. It also involves evaluating the magnitude and significance of potential impacts and consideration of alternative options and recommendations.

2.5.2.1 Policy Analysis

Policy analysis involves the determination of critical aspects that need to be addressed by HIA. It involves a consideration of the content and dimensions, the context of implementation, objectives, outputs, and trade-offs of the policy being analysed (Scott-Samuel *et al.*, 2001). It involves a description of the policy context in which the HIA is being implemented (Birley, 2011).

2.5.2.2 Profiling of Affected Areas / Communities:

Profiling entails a description of the health profile of the affected communities. The profiling process can help identify health concerns (Birley, 2011). It uses available socio-demographic and primary health data from the host communities. Data from key informants and community engagement can also help in profiling the baseline health status. Data from community profiling can provide a baseline for subsequent evaluation. It also helps to identify vulnerable and disadvantaged population groups. Vulnerable and disadvantaged groups require special consideration.

2.5.2.3 Stakeholders and key informants

A critical strength of HIA is the application of multidisciplinary and multisectoral approaches. The involvement of people with diverse expertise enhances its value. Its democratic disposition, which encourages the involvement of a wide range of stakeholders (people who are involved in the project or will be directly affected by it) and key informants (people whose roles result in them having knowledge or information on the relevance of the project and its outcomes), further enhances its value. Public participation throughout the HIA is essential to ensure that local concerns are addressed and for the ethical reason of social justice. The constitution of the stakeholder often includes people from the affected community, community workers, proponents of the project, and experts with relevant knowledge. Others are relevant or related health practitioners, visitors, voluntary organisations, and key decision-makers.

2.5.2.4 Evaluating the Magnitude and Significance of Potential Impacts

This involves the evaluation of the importance, scale, and likelihood of predicted impacts through qualitative research and evidence generated from stakeholders and key informants. Data collection methods include interviews, focus group discussions, modelling, etc. The following steps are necessary for a comprehensive evaluation of impacts:

- a. Collecting as many health concerns as possible from different stakeholders concerning the proposal.
- b. Undertaking a literature review of the evidence base and using this to identify health concerns.
- c. Arranging the health concerns into categories and sub-categories.
- d. Assessing the health risk
- e. Prioritizing the health concerns
- f. Summarizing the evidence in support of each health concern (Birley, 2011)

2.5.2.5 Consideration of Alternative Options and Recommendations:

This involves the consideration of a series of options and recommendations. The optimisation of health impacts must be viewed within the context of overcoming many complex constraints that inevitably emanate from the HIA's social, material, and political environment. Practitioners may have to decide whether to continue or discontinue the project. However, in most cases, it may not be necessary to decide not to continue the project but to look for a more sustainable and beneficial approach. (Scott-Samuel *et al.*, 2001).

2.6 Inter-relationship of HIA with other Health and Impact Assessment Tools

Three different types of health assessments are associated with policies, programmes, or projects. These include Health Risk Assessment (also known as Health Risk Appraisal (HRA), Health Needs Assessment (HNA), and Health Impact Assessment (HIA). There are strong interrelationships between these health assessments. In addition, they are managed using separate reports and tend to affect different communities. These assessments are usually conducted separately and independently using different reports (Birley, 2011).

2.7 Benefits of Health Impact Assessment

EIA and HIA primarily strive to satisfy their overarching aim and objectives. They ultimately contribute to healthy projects and healthy public policies in many ways. There are numerous direct and indirect ways in which they are beneficial (Cole *et al.*, 2005; Bos, 2006; Danneberg *et al.*, 2006; Kemm, 2001; Kemm, 2003; Joffe and Mindell, 2005). A summary of these benefits of HIA is listed below:

- It provides a participatory and engagement forum for project proponents, other interest groups, and the affected community and facilitates public participation in decision-making.
- It addresses the issue of Health Inequalities that may result from project implementation and ensures that the vulnerable are adequately protected (Quigley *et al.*, 2006).

- HIA addresses complicated and interrelated health issues with repercussions for sustainability (Quigley *et al.*, 2006).
- HIA awakens and increases the consciousness of different agencies and individuals on public health issues and tries to x-ray what determines health status, thereby providing a basis for improved collaboration within and between agencies (Quigley *et al.*, 2006; Scott-Samuel *et al.*, 2001).
- HIA provides a 'license to operate' for public bodies and private sector companies that incorporate social and health responsibilities into their activities (Quigley *et al.*, 2006).
- HIA provides a tool for inter-sectoral and multi-sectoral interactions on health, reducing the burden on health sector services.

2.8 Health and Environmental Degradation in the Niger Delta Region

Human health is closely linked with environmental issues (Adekola *et al.*, 2017; Bouchoucha, 2021). It is therefore necessary to look at the intertwining relationship between health and the environment in the Niger Delta region and see how this factor should collectively influence a more proactive approach to health and environmental impact assessment.

Human understanding of the interrelationship between man and his environment dates back to Hippocrates' essay: "Air, Water, Places" (Hu, 2002). The activities of man have inevitably continued to affect the environment adversely, and this has been richly expressed in literature (Woodruff *et al.*, 1997; Young *et al.*, 2004; Jerrett *et al.*, 2005; Tao *et al.*, 2012; Gwangndi *et al.*, 2016; Ogbija *et al.*, 2015; Adekola *et al.*, 2017; Bouchoucha, 2021). As stated in previous sections, Petroleum explorative activities have continued to degrade the environment in the Niger Delta region, and the resultant environmental degradation has health implications for people in the affected region and the global environmental health condition at large (Gwangndi *et al.*, 2016; Adekola *et al.*, 2017).

Haliza and Rapeah (2010) explain that the destruction of natural resources, as evident in the Niger Delta region, does not only affect the natural resources but also alters the ecosystem and causes disease emergencies which adversely affects human health.

This claim has been corroborated by many other researchers (Tyagi *et al.*, 2014; Ogbija *et al.*, 2015; Gwangndi *et al.*, 2016; Adekola *et al.*, 2017). Altering microbial habitats through environmental degradation can affect their potency and mode of action, leading to disease outbreaks (Ogbija *et al.*, 2015).

Understanding how human activities can lead to environmental degradation and how it eventually affects human health is therefore vital to our ability to overcome or reduce any resultant impacts on human health. Environmental degradation, such as the ones encountered in the Niger Delta region, could lead to pollution of natural resources and scarcity (Kesiena, 2009). The scarcity of hitherto readily available resources such as clean water and arable land could lead to hunger, famine, and disease outbreaks. Human activities resulting in fossil fuel burning and the use of thermal stations can cause global warming, acid rain, and human haemoglobin malfunctioning (Young *et al.*, 2004). Other activities, such as the use of pesticides for agriculture and the emission of exhaust fumes, can result in the emission of harmful chemicals such as sulphur dioxide and carbon monoxide, among others, into the atmosphere, which are ultimately harmful to human health. Severe respiratory and cardiovascular diseases and congenital anomalies are associated with air pollution (Chevrier, 2007; Rankin Chadwick *et al.*, 2009; Bouchoucha, 2021).

Tyagi *et al.* (2014: 1492), in their work on causes and consequences of environmental degradation, stated that "the greatest effects on the health of individuals and populations result from environmental degradation and social injustice". Environmental factors contribute significantly to the global disease burden (healthy life years lost) and, by extension, the global death rate (premature mortality) (Bunker *et al.*, 2016). This has led to an increased global disease burden, and the effect is inequitably higher in developing countries (such as Nigeria) than in developed ones (Tyagi *et al.*, 2014). Polluting the standard air and water and fluctuations in heat and cold conditions are associated with the spread of infectious diseases, especially in underdeveloped countries (La Sorte and Thompson, 2007; Bunker *et al.*, 2016). Ogbija *et al.* (2015) investigated the effects of environmental degradation on human health in selected oil communities in the Nigerian Niger Delta. He suggests an association between incessant oil spillage and health vulnerabilities. He also associates air pollution and farmland loss with domesticated livestock (leading to

starvation and ill health) and loss of family members. According to him, "...this attests to why the case of diarrhoea and eye infection admission is also high in the area" (Ogbija *et al.*, 2015: 80). Key areas of environmental degradation include Pollution (air, water, noise, and land pollution), climate change and global warming, and loss of biodiversity.

The contamination of air with smoke, dust, unwanted gases, and other undesirable substances constitutes air pollution. As stated earlier, air pollution is associated with respiratory diseases and congenital anomalies (Burnett and Krewski, 1994; Chevrier, 2007; Rankin Chadwick *et al.*, 2009; Bouchoucha, 2021). Air polluted by the by-product of hydrocarbon contains Sulphur dioxide (SO₂) and other gases. These gases are associated with the irritation of the upper respiratory tract and can also affect visibility (Etuonovbe and Etuonovbe, 2009). The primary cause of air pollution in the Niger Delta region is the flaring of gases by oil processing companies (Gwangndi *et al.*, 2016; Adekola *et al.*, 2017). Other sources of gas flaring, as identified by Etuonovbe and Etuonovbe (2009), include automobile industrial processes, pollen grains, fungus spores, salt spray, smoke from finest fires, dust from volcanic eruptions, exhaust fumes from vehicular activities and other combustion engines, domestic fires, domestic refuse incineration, and bush burning. Due to unabated air pollution, the World Health Organisation (2021) estimates that 3.8 million people a year die prematurely from illness attributable to household air pollution caused by the inefficient use of solid fuels and kerosene for cooking. Table 2.6 summarises the main forms of environmental degradation and their potentially associated health impacts.

As stated earlier, land degradation can lead to food scarcity, which is associated with many health conditions, such as diarrhoea, asthma, eye infection, bronchitis, skin infection, etc. (Ogbija *et al.*, 2015). The region's primary cause of land degradation and contamination is improper disposal of industrial and domestic and oil spillage (Ogbija *et al.*, 2015; Elum *et al.*, 2016). Other forms of environmental degradation or pollution include water pollution, climate change, loss of biodiversity, etc.

Table 2.6: Environmental Degradation and Human Health

| Human activities | Potential environmental consequences | Resultant environmental degradation | Potential health consequences |
|--|--|---|---|
| <ul style="list-style-type: none"> • Gas flaring • Pollen grains • Fungus spores • Salt spray • Smoke from the finest fires • Dust from volcanic eruptions • Automobiles industrial processes • Aircraft, ships, railways, and other combustion engines • Domestic fires, domestic refuse incineration, and bush burning. | <p>Acid rain</p> <p>Unwanted gases are suspended in the atmosphere. Such gases as Sulphur dioxide, carbon monoxide, carbon dioxide, etc.</p> <p>Heat Pollution</p> | <p>Air Pollution</p> <p>Dust suspension</p> | <ul style="list-style-type: none"> • Pungent suffocating smell • Irritation affecting the eyes, skin, nose, and throat. • Respiratory and cardiovascular diseases • combustion Soot particles settle into the lungs to cause premature death, heart attacks, and strokes, as well as acute bronchitis and aggravated asthma among children. • The heat generated from carbon combustion accumulates to form a false high-temperature atmosphere around most flaring sights and within communities. |
| <ul style="list-style-type: none"> • Oil Spillage • Agricultural practice resulting in pesticides and fertilizers that wash away from farms, and agricultural waste management. • Industrial activities: untreated human wastewater, and industrial waste • Population growth leading to increased human population density and poor management of household waste. | <p>Contaminated water and water poisoning</p> <p>Drainage problems</p> <p>Drought and water scarcity</p> | <p>Water Pollution</p> | <p>Chemicals from industrial polluted areas cause respiratory and chromosome damage in women. Moreover, it causes stillbirths and cancer in women. (Uchegbu, 2002)</p> <p>Polluted water becomes a reservoir for harmful microorganisms and disease vectors which leads to outbreaks of communicable diseases.</p> <p>Affects the environment and food chain and reduces available water for recreation.</p> |
| <ul style="list-style-type: none"> ➤ Oil spillage on land ➤ Agricultural Practices leading to Destructive | <p>Land contamination with crude oil</p> | <p>Land Degradation and</p> | <p>humans and wildlife can be exposed to contaminants through</p> |

| | | | |
|---|--|--|---|
| <p>logging of forests, Overgrazing and over-cropping of arable lands, Land degradation with pesticides, herbicides, and fertilizers.</p> <ul style="list-style-type: none"> ➤ Poor industrial practices such as Strip mining, poor waste disposal, ➤ Waste generated from nuclear reactors and soil depleted with weapons making it virtually lifeless. ➤ Improper resources management ➤ Natural disasters such as Flooding and wind erosion menace, natural landslides, etc. ➤ Destruction of arable land and wetlands and marches for development and large landfills | <p>Arable land is taken over by indiscriminate waste disposal.</p> | <p>Land Pollution</p> | <p>inhalation, ingestion, or dermal contact.</p> <p>Contaminated soils can leach toxic chemicals into nearby ground or surface waters to pollute waterways causing waterborne diseases and diseases associated with water contamination.</p> <p>Several communicable diseases, such as malaria, typhoid, dysentery, cholera, yellow fever, yaw, and relapsing fever, could be associated with contaminants from the soil or land.</p> |
| <p>Industrial Activities Vehicular activities Other human activities, such as music</p> | <p>High-density urban areas or even in the industrial areas that usually use industrial plants as their sources of energy</p> | <p>Noise</p> | <p>Exposure to loud noise can be associated with noise-induced hearing Loss (NIHL). Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress.</p> |
| <p>Oil spillage: The smoke is a major contributor to greenhouse gases. Gas flaring Poor industrial practices Effluent disposal Poor agricultural practices lead to the disposal of chemicals, insecticides, and herbicides into the environment (land air, and water)</p> | <p>Increased Carbon footprint Acid Rain Extreme weather conditions such as storms and floods, heatwaves, etc. Food chain disruption Disruption of other social determinants of good health</p> | <p>Climate Change, Global Warming, and ozone layer depletion</p> | <p>Climate change can lead to Increased incidences of zoonoses, cancer, and human haemoglobin malfunctioning.</p> <p>It is also associated with water, food, and vector-borne diseases, Also associated with increased mental health issues (WHO, 2021)</p> |
| <ul style="list-style-type: none"> ❖ Oil spillage, ❖ Gas flaring ❖ Poor industrial practices ❖ Effluent disposal | <p>Deforestation: Climate change, Natural Causes</p> | <p>Loss Of Biodiversity</p> | <p>Underpinning the food chain. The food we eat and the air we breathe depend on biodiversity for protection from other threats,</p> |

| | | |
|---|--|---|
| <ul style="list-style-type: none"> ❖ Poor agricultural practices leading disposal of chemicals, insecticides, and herbicides into the environment (land air, and water) ❖ desertification and deforestation, water hyacinth, loss of biodiversity | | <p>like pollution, flooding, and climate breakdown.</p> <p>Changes in Biodiversity affect the four “biodiversity drivers” of human health and well-being: quality of life, medicinal and genetic resources, constraints on infectious disease, and ecosystem services (Sala <i>et al.</i>, 2009).</p> |
|---|--|---|

The interrelationship between environmental activities and health further brings to the fore the health system challenges that are prevalent in the Niger Delta region, given its status as the primary host community to oil and gas exploration. This research work becomes necessary given the need to tackle these health and environmental challenges. The widely accepted use of EIA or IIA as a policy and decision-making tool is hoped to provide a platform for health interventions and promotion, provided the process is refined to maximise its potential.

2.9 Available Health Infrastructure in the Region

Nigeria still operates urban-based medical services, a system inherited from colonial rule because the colonial administration operated mainly from urban areas where colonial administrators had their base (Omuta, 2015). This system has gradually led to the neglect of local health care matters, and the Niger Delta has been worst affected, given its status as an ethnic minority region. Political and tribal marginalisation, coupled with the lopsided focus on a few urban areas, has led to the apparent infrastructural deficiency in the Niger Delta Region. Despite many years of global agitation to improve primary healthcare systems, this apparent infrastructural deficiency has persisted.

Health infrastructure in this context refers to those institutions and facilities that can collectively support healthcare capacity and social health response. They can be categorised as:

- a) Physical infrastructure: These include physical things, hospital beds, pipe-borne water, electricity, buildings, etc.

- b) Technological Infrastructure: This includes equipment that facilitates the effective and efficient delivery of healthcare services. Such equipment includes needles, syringes, stethoscopes, microscopes, blood pressure machines, etc.
- c) Human Infrastructure: This category includes all the human resources, including doctors, nurses, pharmacists, community health workers, support workers, etc.

An evaluation of the health infrastructure in a typical Niger Delta community shows "varying degrees of deficiencies in their physical amenities" (Omuta, 2015:6). Ademiluyi and Aluko-Arowolo (2009) also expressed similar views. The region's local communities are mainly serviced by primary healthcare centres (PHCC) that lack physical and technological infrastructure. A typical example of infrastructural distribution in the region is shown in Table 2.7, which shows the percentage distribution of communication facilities in PHCCs in the Niger Delta as presented by Omuta (2015). The percentage distribution shows a clear need for a good communication system (in addition to GSM) in the local communities.

Table 2.7: The Percentage Distribution of Communication Facilities in PHC Centres

| LGAs | None | Landline phones | Cellular phones (GSM) | short waves | computer facilities | Internet facilities | total |
|----------------|-------|-----------------|-----------------------|-------------|---------------------|---------------------|-------|
| Aniocha North | 92 | 0 | 8 | 0 | 0 | 0 | 100 |
| Bomadi | 56 | 0 | 22 | 0 | 11 | 11 | 100 |
| Ika South | 17 | 0 | 83 | 0 | 0 | 0 | 100 |
| Isoko North | 36 | 5 | 21 | 11 | 11 | 16 | 100 |
| Ndokwa East | 100 | 0 | 0 | 0 | 0 | 0 | 100 |
| Okpe | 11 | 12 | 35 | 6 | 12 | 24 | 100 |
| Udu | 47 | 0 | 29 | 0 | 14 | 10 | 100 |
| Ughelli South | 73 | 3 | 21 | 0 | 3 | 0 | 100 |
| Warri North | 100 | 0 | 0 | 0 | 0 | 0 | 100 |
| Average | 59.11 | 2.22 | 24.33 | 1.89 | 5.67 | 6.78 | 100 |

Source: Omuta (2015).

Several interventions have been recommended to cushion the effects of neglect and promote the health and well-being of people in the region. Some of these recommendations are improved funding and promoting policies prioritising health. Integrated impact assessment has frequently been used to guide decision-makers while also ameliorating the negative impact of projects that would worsen the health and socioeconomic state of the deprived community dweller. This research, therefore, seeks to improve the impact assessment tool's ability to improve people's health and well-being.

CHAPTER THREE

The Concept of Environmental Impact Assessment and Relevant Evaluation/Implementation Theories.

3.1 Introduction:

Theories and analytic frameworks ensure the quality and rigour of global health intervention implementation evaluations” (Ridde et al., 2020: 1). Impact evaluations should go hand in hand with implementation evaluations to understand implementation processes, causal mechanisms, and contextual factors shaping outcomes of global health interventions (Ridde et al., 2020: 1).

This chapter introduces the concept of environmental impact assessment and discusses the interrelationships between various forms of impact assessment practised in Nigeria. The chapter gives the background information needed to understand and conceptualise subsequent research viewpoints.

The chapter also delves into various theoretical viewpoints in evaluation studies and policy implementation. The interrelationships between various theoretical stances in evaluation studies and the need for contextualisation and integration are appraised. The chapter also identifies varying contingencies in policy implementation and presents Matland’s ACM model of policy implementation.

3.2 The Practice of Integrated Impact Assessment (IIA)

The International Institute of Impact Assessments defines EIA as: “The process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made” (IAIA, 1999: 2; Everard, 2018: 1). Loomis and Dziedzic (2018) also refer to it as a "multidisciplinary tool that attempts to predict the various impacts a project will have upon its surroundings, including the biophysical, social, and health environments".

Whereas the HIA brings out all the health impacts, the EIA, on the other hand, brings out all the environmental impacts of policies, programmes, and projects (Abah, 2012). EIA ensures the recognition and incorporation of environmental considerations into the development decision-making process by bringing out all the adverse significant biophysical, social, and other relevant effects of the proposals. By bringing out these impacts, EIA helps to protect the productivity and capacity of natural systems and the ecological processes that maintain their functions. This function of EIA further leads to achieving sustainable developments, optimal resource use, and improved management opportunities (Wood, 2003). The basic principles of EIA emphasise the fact that EIA should be purposive, rigorous, practical, relevant, cost-effective, efficient, focused, adaptive, participative, interdisciplinary, credible, integrated, transparent, and systematic. The rationale behind the EIA, similar to that of the HIA, is that if decision-makers are aware of the potential impacts of a proposed development, they will be better informed to make better decisions. There is a considerable overlap between these impact assessments in actual practice.

The initiative for integrated impact assessment was mainly driven by the need to attain sustainability in developmental activities (George, 2001). With the evolution and growth of EIA and the increasing espousal of sustainability as an overarching policy objective, the need arises to assess the impact of specific intervention programmes on sustainable development, hence the emergence of IIA (Bond *et al.*, 2001). An enduring environmental and economic stability is the underpinning goal of sustainable development. According to the United Nations (UN), such environmental and economic stability can only be attained by acknowledging and integrating environmental and natural resource management, social inclusion and equity, and health and socio-economic development in all decision-making processes (Emas, 2015; UN, 1992). These views were first introduced in the Brundtland Report of 1987 (Our Common Future) (UN, 1987) and were further collaborated in the 1992 declaration by the UN (The Rio Declaration) (UN, 1992). Integrated impact assessment ensures that all areas of assessments required for the sustainability of developmental programmes are incorporated into the impact assessment process. It comprises three areas of assessment: Strategic Environmental Assessment or Environmental Impact Assessment (Environmental and economic impacts), Social

Impact Assessment (Socio-economic and equity impacts), and Health Impacts Assessment.

Prominent HIA practitioners have previously advocated the integration of HIA with EIA or other impact assessments (Birley and Peralta, 1992; Birley *et al.*, 1998; Birley, 2011; Abah, 2012). They argued that it provides an all-inclusive knowledge of the complex linkages and interdependencies between human developmental activities and the biophysical environment, given that it covers all impacts holistically.

The practice of integrated impact assessment in Nigeria is quite limited to the few private initiatives of multinational organisations. There is no National framework for IIA, although the various EIA frameworks recommend the incorporation of health impacts in the statutory EIA guidelines. However, Shell Petroleum Development Company, as well as other multinational companies, have completed some EIA with HIA integrated therein, and the Royal Dutch/Shell Group has developed and published a document on minimum health standards for EIA (Birley, 2003; SPDC, 2002). Their effort suggests that regulation alone may not be the only stratagem for improving EIA practices. Emphasis on adherence to corporate social responsibilities, good practice principles, and awareness creation amongst stakeholders can also help facilitate good EIA practices vis-à-vis the practice of IIA.

Birley (2003) highlights the nonavailability of an integrated model as a significant hindrance to IIA practice in Nigeria. Practitioners use models that suggest three separate assessments (Birely, 2007; Abah, 2012), which come with the difficulties of aligning three methodologically and fundamentally different data sets coupled with the requirement of more time and resources. This approach recommends centrally coordinated components, which start with the scoping exercise. At the scoping stage, a central decision-making body decides on the data required for the component baseline assessments. Such collective decision allows for cross-referencing and eradicates duplication in cases where each factor/data is relevant to two or more baseline assessments. The triad health, socio-economic, and biophysical baseline assessment teams work together at the end of the field study and data acquisition to generate a comprehensive baseline result that can feed into the main impact analysis. By this approach, the environmental, health, and socio-economic sensibilities likely to

be impacted are collectively defined and identified based on the assessor's understanding of all baseline parameters (FMoE, 2005).

3.2.1 The Nigerian IIA/EIA System and the Federal Ministry of Environment

The Nigerian environmental policy framework was introduced into the Nigerian National Development Plan after the Federal Environmental Protection Agency (FEPA) was established in 1988 (Nwafor, 2006). Although this was preceded by various environmental drives, starting with establishing the Division of Urban Development and Environment in 1975, the establishment of FEPA fully cemented the integration of the environmental policy framework into the National Development Strategy. The positive developments that trailed FEPA's establishment and the successful publication of the National Policy on Environment in 1989 led to the enactment of the EIA Act in 1992 and the reconstitution of FEPA to become an entire Ministry in 1999 (Olokesusi, 1998). The idea behind the formation of the Environment Ministry at that time was to address the country's ecological and environmental problems comprehensively. The two legal instruments that backed the proposed EIA framework from the FMoE were the EIA Act of 1992 and the FEPA Decree No. 58 of 1988. These two legal instruments led to the birth of the present-day EIA system. (Olokesusi, 1998; Adomokai and Sheate, 2004). Olokesusi (1998:160) highlighted that the FEPA decree of 1988 gave the then Ministry of Economic Development the powers to set environmental guidelines and standards, monitor and enforce compliance with environmental measures, and take full responsibility for managing and protecting the environment. With the establishment of the FMoE, it became possible for the EIA procedure to be published and reviewed over the years. Details in Chapter 6 further elaborate on the stages of the EIA procedure.

Under the EIA Act of 1992, the EIA system required that project proponents declare their intention by notifying the Ministry. The Ministry would then institute the procedural EIA process, which would commence with a screening exercise. The screening process helps in ascertaining whether a complete EIA process is required. The FMoE, in its regulatory role, has adopted the FEPA categorisation of projects to ascertain the required level and type of EIA. Table 3.1 shows the various project categories, and Table 3.2 shows the minimum size or capacity required.

Table 3.1: Category on Mandatory EIA Study in Nigeria (Source: FMoE, 1995)

| Project Category | Project type | Other considerations |
|------------------|---|---|
| 1. 1 | Agriculture/Agro-allied Industry/ manufacturing Food, Beverage, Tobacco processing. Infrastructure: Ports, Housing, Airport, drainage and irrigation, railway. Transportation: resort and recreational development, Power generation. Petroleum, mining, quarries, waste treatment and disposal, water supply, land reclamation, and brewing. | |
| ❖ 2 | Agriculture/rural development Reforestation/ afforestation project, small-scale irrigation, small-scale aquaculture, sawmilling, logging, rubber processing, fish processing Industry/Infrastructure Mini-hydropower development, any small-scale industry development, e.g., textiles, chemical industry, power transmission, renewable energy development, telecommunication facility, rural water supply, public hospitals, road rehabilitation. Any form of quarry or mining. | If the project is located in an environmentally sensitive area, e.g., coral reefs, mangrove swamps, or a small inland area, Tropical rainforest areas prone to erosion, mountain slope areas prone to desertification, natural conservation areas, areas with protected /endangered species, and areas of scientific interest. Etc. Moves to category 1 |
| ❖ 3 | Institutional development, health, family planning, nutritional and educational programmes. | If the project involves physical interventions in the environment, Moves to Category 2 |

Table 3.2: Categorisation of projects that require EIA under the FMoE EIA Framework (Source: Adapted from FEPA, 1992, In Olokesusi, 1998: 163-165).

| Type of Development | Minimum Size or Capacity |
|--|--|
| 1. Agriculture (a) Land conversion from forest to agricultural production. (b) Resettlement of families. (c) Development of agricultural estates | 500 hectares 100 families 500 hectares |
| 2. Airport (a) Construction of airports (b) Airstrip in state and national parks | 2,500 meters All |
| 3. Drainage and Irrigation (a) Surface areas of dams, and man-made lakes. (b) Virgin forest drainage (c) Wetland drainage (d) Irrigation schemes | 200 hectares 100 hectares 100 hectares 5,000 hectares |
| 4. Land Reclamation (a) Coastal reclamation | 50 hectares |

| Type of Development | Minimum Size or Capacity |
|---|---|
| 5. Fisheries (a) Fishing harbours (b) Harbour expansion leading to a 50% increase in fish landing (c) Clearing of mangrove swamp forests | All All 50 hectares |
| 6. Forestry (a) Conversion of hill forest land to other land uses (b) Logging of forest land in water reservoirs or catchment areas (c) Conversion of mangrove swamps for industrial, housing, or agricultural use (d) Clearing of mangrove swamps on islands near national parks | 50 hectares All 50 hectares All |
| 7. Housing (a) Housing development | 50 hectares |
| 8. Industry (a) Chemical plant production (b) Nonmetallic – cement - lime (c) Iron and Steel - iron ore (Required raw materials) scrap iron. (c) Shipyards - dead weight tonnage (d) Pulp and paper industry | 100 tons/day 30 tons/hour 100 tons/day 100 tons/day 200 tons/day 5,000 tons 50 tons/day |
| 9. Infrastructure (a) Hospital with recreational facilities (b) Industrial estate for medium-heavy industries (c) Construction of expressways (d) Construction of national highways (e) Construction of new townships | 50 hectares All All All |
| 10. Ports (a) Construction of ports (b) Expansion of ports by 50% capacity | All |
| 11. Mining (a) Mining of materials in new areas (b) Processing of ore, aluminium, copper, gold, or tantalum (c) Sand dredging | 250 hectares 50 hectares |
| 12. Petroleum (a) Oil and gas field development (b) Construction of offshore pipelines (c) Construction of oil and gas separation, processing, handling, and storage facility (d) Construction of oil refineries (e) Production depots for storing petrol, gas, or diesel | 50 kilometres 60,000 barrels |
| 13. Power generation and transmission (a) Stream-generated power stations (b) Dams and hydroelectric power schemes (i) dams over 15 meters high (ii) reservoirs with a surface area (c) Construction of combined cycle power stations | 10 megawatts 40 hectares |
| 14. Quarries Quarrying aggregate of limestone, silica, granite, and other solid minerals near residential, commercial, and industrial developments | 400 hectares |
| 15. Railways (a) Construction of new routes (b) Construction of branch lines | All All |
| 16. Transportation Construction of rapid transport projects | All |

| Type of Development | Minimum Size or Capacity |
|--|--------------------------|
| 17. Resort and Recreational Development (a) Coastal resort facilities of hotels (b) Hill Station resort (c) Tourists of recreational facilities on islands and national parks | All All All |
| 18. Waste Treatment and Disposal (a) Incineration plants, sanitary landfills, and wastewater treatment plants, etc. 19. Water supply (a) Construction of dams, impounding reservoirs (b) Groundwater development for industrial agricultural or urban water supply | All All All |

Completing the screening process and confirming the need to commission an impact assessment heralds the scoping process. The procedural stages and methods involved in carrying out the EIA are analogous to the stages in HIA explained in previous sections (Section 2.5). Nwafor (2006) asserted that the procedures are designed to raise EIA writing and reporting standards to ensure compliance with international best practices.

As of today, other government agencies, mainly under the Federal Ministry of Petroleum Resources, have some EIA regulatory framework and regulatory functions. The proscribed Department for Petroleum Resources (DPR) regulated the oil and gas sector and had its own regulatory framework and guidance process. Although the government has recently proscribed the agency, its functions now reside with the newly formed Nigerian Upstream Petroleum Regulatory Commission (NUPRC) and the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA). Whereas the FMOE EIA framework covered all projects in the country, including the oil and gas sector, the latter has a parallel EIA guideline and is still mandated to follow the FMOE framework. The challenges posed by this duplication are part of the issues further explored in the later part of this work. It would be necessary to investigate how this dual regulatory role challenges the process of IIA/EIA in the region.

3.2.2 Factors that Influence Good Health and Environmental Impact Assessment

The quality of Health and Environmental Impact Assessment significantly affects its ability to influence policy and achieve the overarching goal it sets out to achieve (Jalava *et al.*, 2010). Research has shown that the qualities of EIA and HIA have

increasingly improved over time (Arts, 1998; Barker and Wood, 1999; Glasson *et al.*, 2005; Jalava *et al.*, 2010). Enhancing the qualities of HIA and EIA requires the holistic approach of putting quality measures in place at all stages of the impact assessment process. Such an approach requires practitioners to work towards strengthening each stage of the process, from consultation, screening, scoping, community participation, assessment process, report writing, and dissemination. Maintaining quality through these stages requires deliberate actions toward strengthening the factors on which quality is dependent. Factors capable of influencing the quality of HIA and EIA can, by extension, influence its impact on policy decision-making. These factors can be summarised according to the stage of the assessment process that it impacts.

At the consultation and planning stage, the background knowledge and level of education of members of the steering group can significantly determine the quality of planning and design of the Impact assessment process. The composition of a multidisciplinary team of experts requires professionals with relevant EIA or HIA experience. Financial resource availability is an essential factor that will cut across most stages and can significantly influence the outcome of the EAI or HIA. Successful planning and coordination at this stage set the foundation for a good EIA or HIA.

During the screening stage, practitioners decide whether to conduct the EIA. The nature of the projects, the project time scale, the screening tool used, and the local regulations can significantly influence the quality and smoothness of the screening exercise. Similar factors influence the scoping stage, including steering group members' composition and working relationships. Community and stakeholders' participation can be influenced mainly by resource availability, regulatory and enforcement standards, level of awareness, and educational level of stakeholders and community members. Similar factors listed above influence the dissemination stage, including the nature of the report and its Environmental Management Plan.

The chosen assessment method can significantly influence the impact assessment stage. Practitioners strongly recommend an evidence-based approach for this stage, and assessment tools should be compatible with the targeted impacts. The European Commission suggested specific quality requirements for a standard EIA report (European Commission, 2001; Jalava *et al.*, 2010). These include:

- A clear structure with a logical sequence, for example describing, existing baseline conditions, predicted impacts (nature, extent, and magnitude), scope for mitigation, agreed mitigation measures, and significance of unavoidable/residual impacts for each environmental topic.
- A table of contents at the beginning of the document.
- A clear description of the development consent procedure and how EIA fits within it.
- Presented as a single document with appropriate cross-referencing.
- Concise, comprehensive, and objective report.
- A report written impartially without bias.
- Includes a full description of the development proposals.
- Makes effective use of diagrams, illustrations, photographs, and other graphics to support the text.
- Uses consistent terminology with a glossary.
- References all information sources used.
- Has a clear explanation of complex issues.
- Contains a good description of the methods used for the studies of each environmental topic.
- Covers each environmental topic in a way that is proportionate to its importance.
- Provides evidence of good consultations.
- Includes a clear discussion of alternatives.
- Commits to mitigation (with a programme) and to monitoring.
- Has a non-technical summary that does not contain technical jargon.

3.2.3 Benefits Environmental Impact Assessment.

The benefits of EIA could be classified based on the impact on the sponsors and the local communities. According to the Global Development Research Centre, the benefits of EIA to project proponents and sponsors could summarised as follows:

- Reduced cost and time of project implementation.
- Cost-saving modifications in project design.
- Increased project acceptance.
- Avoided impacts and violations of laws and regulations.

- Improved project performance.
- Avoided treatment/clean-up costs.

Local communities also benefit from taking part in EIAs, and the benefits of EIA to participating local communities could be summarised as follows:

- A healthier local environment (forests, water sources, agricultural potential, recreational potential, aesthetic values, and clean living in urban areas).
- Improved human health.
- Maintenance of biodiversity.
- Decreased resource use.
- Fewer conflicts over natural resource use.
- Increased community skills, knowledge, and pride.

3.3 Evaluation of Research and its Application to Environmental and Health Policies

It is essential to place impact assessment within the theoretical context in order to fully understand the theoretical implications of the practice and implementation of impact assessment in the Niger Delta region. Understanding implementation theories will enable us to fully understand the practice and ensure the proper positioning of developing or newly developed frameworks within the right theoretical background (Weston, 2000). Acquiring such understanding is more critical, given that the need to inform or influence decision-making is at the forefront of most impact assessments. Therefore, concepts must require theoretical perspectives to fully enhance their robustness and rigour (Ridde *et al.*, 2020; Nilsen, 2020). Integrated and accurate use of well-grounded theory could help build the knowledge base and advance science (Mark, 2005). Since this research seeks a better understanding of the process of integrated impact assessment in the Niger Delta region, which strongly relies on evaluation research principles, there is a need to look at evaluation theories.

Efforts to develop evidence-based actions in research helped broaden the scope of evaluation research in the nineteen sixties (McKie, 2002; Breier, 2005). There are several definitions of evaluation research, with the main definitions considering the need for a systematic and value-driven approach (Stufflebeam and Coryn,

2014). While Patton (1987:145) defined evaluation as the “systematic collection, analysis and interpretation of information about activities and outcomes of actual programmes or policies for interested persons to make judgements”, Stufflebeam and Coryn (2014: 14) view it in a broader context. They define it as a “systematic process of delineating, obtaining, reporting, and applying descriptive and judgemental information about some object’s merit, worth, probity, feasibility, safety, significance, and /or equity”.

Consequently, evaluation is not just a means of proffering judgment or expressing value but providing information to guide policy decision-making (Fournier, 1995; Vestman and Conner, 2006; Stufflebeam and Coryn, 2014). Stufflebeam and Coryn (2014) suggest that evaluators sometimes face the task of considering multiple or conflicting values. They advised that it is best to confront such by “separately interpreting process and outcome information against the distinct set of values priorities held by different segments of the stakeholder’s population” Stufflebeam and Coryn (2014:14). They also advised against taking sides with any value set or opinion.

The terms evaluation theory, models, and approaches have been used interchangeably in literature (Weiss, 1997; Weiss, 2004; Mark, 2005; Boulay and Han, 2008; Stufflebeam and Coryn, 2014). Researchers have propounded various evaluation theories over the years (Donaldson and Gooler, 2003; Mark, 2005; Shaw *et al.*, 2006). The History of evaluation theories can be traced to three primary research foundational roots: epistemology, social inquiry, and social accountability (Alkin, 2013; Alkin and Christie, 2004). These primary foundations form the basis through which many of the evaluation theories originated. Researchers have produced various branches of theoretical interest relying mainly on the theorist's focus or area of emphasis. Subsequent texts will discuss three major interest areas identified in the literature. Christie and Alkin (2012) identified these interest areas as branches and named them as valuing, methods, and use. Figure 3.1 shows a modified pictorial representation of the origin and growth of the evaluation theory.

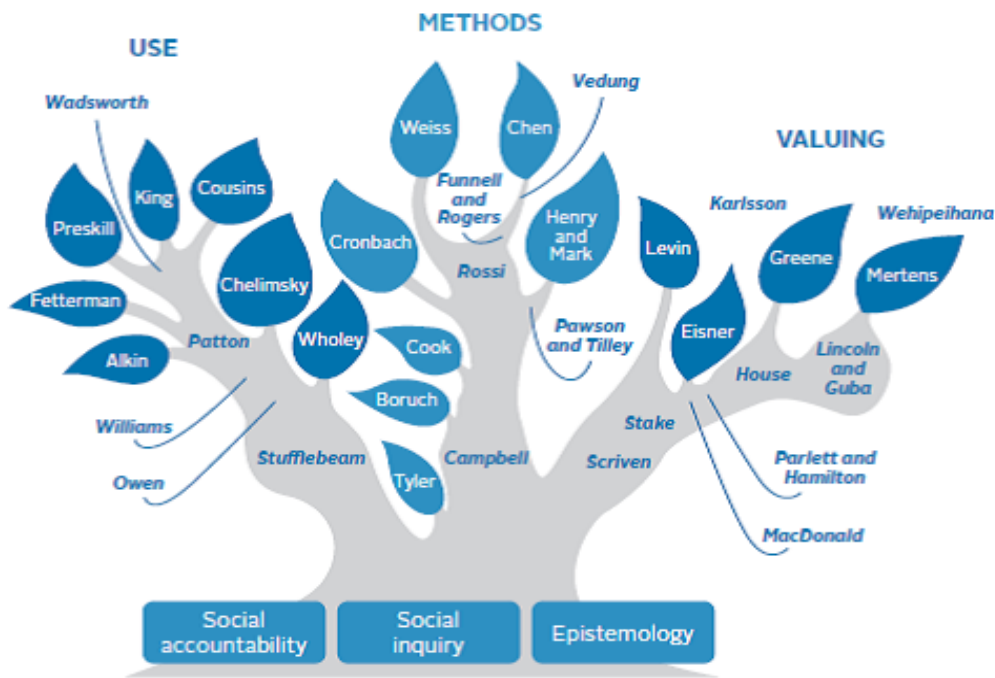


Figure 3.1: Evaluation Theory Tree
 (Source: Adapted from Christie and Alkin, 2012)

Figure 3.1 shows that the value branch contains evaluation theories rooted in research on epistemological arguments, such as those that look at the legitimacy of value claims, the view that truth is what we make of it, and the nature of universal claims. Theorists founded on this principle argue that the value of the subject of evaluation is vital to the process. The work of Michael Scriven (Scriven, 1991; Shadish *et al.*, 1991), who compared evaluation reports to consumer reports and maintained that the evaluation researcher should determine value without passing the bulk to decision-makers, initially drove this research branch (Scriven, 1991,). Levin’s work (Levin, 2005) on cost analysis forms a critical part of the value-based evaluation theory as it provides “an array of economics-based strategies for determining program costs before and during implementation” (Christie and Alkin, 2012: 33)

On the other spectrum of the Evaluation theory tree is the Use branch, which takes its root from social accountability. Accountability, in this instance, involves process accountability, goal accountability, and outcome accountability (Alkin, 2004). Patton’s views on Utilisation-Focused Evaluation (UFE) theory (Patton and Campbell-Patton, 2021) espoused the views of researchers within this theoretical branch. Describing the concept of UFE, Paton stated that:

Utilization-Focused Evaluation begins with the premise that evaluations should be judged by their utility and actual use; therefore, evaluators should facilitate the evaluation process and design any evaluation with careful consideration of how everything that is done, from beginning to end, will affect use. Use concerns how real people in the real world apply evaluation findings and experience and learn from the evaluation process (Patton, 2013:1).

Proponents of UFE emphasise that the critical issues to address at the conception of any UFE should be to understand who will use the evaluation results and what should be done to make the result as beneficial to them as possible. The works of Daniel Stufflebeam (Young-Lee, 2019) in developing the Context, Input, Process, and Product (CIPP) evaluation model further emphasise the need for the consideration of usage. He proposed combining various evaluation concepts (context, inputs, process, and product evaluation) and emphasised flexibility.

In the middle of the tree lies the methods branch. It is rooted in the concept of social inquiry and follows the work of Donald Campbell, whom many researchers call the “Methodologist of the Experimenting Society” (Christie and Alkin, 2012:18; Patton and Campbell-Patton, 2021). Researchers in this branch mainly lay their emphasis on evaluation methods. Weiss’s advocacy for theory-based evaluation theory gained notoriety in the 1990s. She explained that “theory-based evaluation examines conditions of program implementation and mechanisms that mediate between processes and outcomes to understand when and how programs work” (Weiss, 1997: 41).

On the other hand, Mark (2005) expresses the contingent nature of most, if not all, evaluation theories. He states that they prescribe or are open to “different approaches under different circumstances” (Mark, 2005:3).

Other Researchers have added to the theoretical build-up of the evaluation theory. Chen and Chen (2005) and others have suggested that the programme stage of the evaluated project should drive evaluation decisions and choices, while Mark et al. (2000) advocate for more consideration of the likely contribution to social betterment. Within the framework of these theories lies the concept of context in determining or

choosing appropriate evaluation techniques (Fitzpatrick, 2012). Christie and Alkin (2012) emphasise the interrelationships and overlap that exist among these theories.

Within the environmental and health policy framework, the critical role of evaluation in providing factual and objective knowledge should be at the forefront of any evaluation exercise (Donaldson and Lipsey, 2006). It should improve decision-making, enhance accountability, encourage organisational learning, and help resource allocation (Walker and Duncan, 2007). Therefore, evaluation research in this context mainly employs a combination of theoretical perspectives. For example, Stufflebeam's CIPP evaluation model and Robert Stake's work on program Evaluation and Case Studies in Science Education found great relevance in applied evaluation practices in environmental health in the Niger Delta region. Significant components of Stake's theory include the belief that knowledge is context-bound, meaning there is no actual value to anything. It also includes the belief that evaluations should incorporate stakeholders' beliefs, values, and perspectives, which could best be represented through case studies.

Many researchers have advocated for the prioritisation of public opinion during policy evaluation because of the increasing tilt towards subjectivity as a philosophical stans in the evaluation process (McCool, 1995; Powell and Maynard, 2007; Walker and Duncan, 2007). These subjective views are integrally incorporated into the framework of impact assessment models in the region and inform the underpinning principle of this research framework.

3.4 Implementation Theories and Approaches in Environmental/Health Policies

To further elaborate on the implementation of impact assessment as an intervention approach, it is essential to look at policy implementation theories as they relate to the implementation of impact assessment (ESHIA process implementation). In positioning implementation in a theoretical context, ensuring that socio-economic, political, and organisational/institutional factors in resolving environmental issues are prominently recognised is essential.

Policy implementation is the process of carrying out a series of activities by the government or other interested parties to achieve any government's decision articulated as a policy statement (DeGroff and Cargo, 2009; Bullock and Lavis, 2019). In simple terms, "implementation is an iterative process in which ideas, expressed as policy, are transformed into behaviour, expressed as social action" (Ottoson and Green, 1987: 362). Although contemporary debate and focus on policy implementation have shifted from the early days of debate between proponents of the top-down and bottom-up approaches (Howlett, 1991; Matland, 1995; deLeon and deLeon, 2002) to a more democratically focussed approach (DeGroff and Cargo, 2009), the public policy implementation discuss is still rooted in the top-down/bottom-up's effort to provide more empirical approach to policy implementation (DeGroff and Cargo, 2009; Coleman *et al.*, 2021). The top-down model advocates a national management perspective (DeGroff and Cargo, 2009) and considers implementation to be a product of bureaucratic management procedure involving compliance, coercion, and control to ensure adherence to policy goals (Mazmanian and Sabatier, 1989; DeGroff and Cargo, 2009). The approach considers implementation to be mainly concerned with the goals embodied in management's authoritative decisions and, as such, should be primarily concerned with how the actions of officials and target groups meet those decisions (Matland, 1995). The approach advocates for clearly defined policy objectives and recommends providing policy tools. It also characterises policy by the presence of an implementable programme (Weible and Sabatier, 2018). Major criticisms of the top-down approach include the assumed lack of consideration for actions taken early in the policy decision-making process. Critiques argue that their focus on statutory language as their starting point ignores the significance of many implementation barriers prevalent at the early stages of the policy-making process (Matland, 1995; Weible and Sabatier, 2018). Other areas of criticism include their "exclusive emphasis on the statute framers as key actors" and their consideration of the implementation process as purely administrative, ignoring or trying to eliminate the political context.

On the other hand, the bottom-up approach advocates for the early involvement (at the policy formulation level) of those affected (Matland, 1995; DeGroff and Cargo, 2009; Weible and Sabatier, 2018). Proponents of the bottom-up approach assume that lower-level actors are active implementers, and as such, programme success

depends on these individuals' skill sets. According to Matland (1995:150), "Bottom-uppers argue that the goals, strategies, activities, and contacts of the actors involved in the micro implementation process must be understood in order to understand implementation". A quick comparison of the two approaches shows that the bottom-up approach prioritises conflict reduction through compromise or bargaining, while the top-down approach prioritises compliance (Matland, 1995).

Further studies in implementation have led to the emergence of various concepts and views on policy implementation. Some theorists suggest that policy implementation is a social learning process where practical issues of identity (participation) and mutual engagements (deliberations) are resolved (Bandura, 1977; Illeris, 2002; Bull *et al.*, 2008; Schwandt and Burgon, 2006). They propose that the social learning process should be categorised into four interrelated activities: communication, action, negotiations, and reflection (Illeris, 2002). This categorisation led them to propose the Advocacy Coalition Framework (ACF). The AFC helps to understand the interactions within groups or group alliances (advocacy groups) involved in the implementation process (Birkland, 2005). Other researchers have also acknowledged the complexities within organisations and proposed the existence of complex interrelationships in their operations. In line with their viewpoint, proponents of this assumption insist that implementation is a process of multi-level bargaining (Mazey, 1996; Fischer, 2004; Moliterno and Mahony, 2010; Van-de-Brande *et al.*, 2011). They state that implementation is a continuous process of multi-level bargaining between implementers and policy decision-makers (Jordan *et al.*, 1998).

Most policy implementation theorists believe that policy implementation models should be combined to address varying contingencies of the implementation process (Matland, 1995; Mischen and Sinclair, 2007; Oosterwaal and Torenvlied, 2011). The contingency approach is more emphatic given the challenge of finding a single implementation theory that best describes the implementation process (Matland, 1995; deLeon (1999; DeGroff and Cargo, 2009; Weible and Sabatier, 2018). Neither the top-down nor the bottom-up approach appropriately describes the implementation process involving conflicting and ambiguous policies (Matland, 1995; deLeon, 1999). Matland (1995) explains that both approaches are normatively biased and proposes the Ambiguity-Conflict Model (ACM) (Matland, 1995). He sought to reconcile the divide

between the top-down/bottom-up approaches by presenting a contingency model that attempts to provide a more comprehensive and coherent basis for understanding implementation (Matland (1995:155). He acknowledges that varying factors affect the implementation process depending on conflicts or ambiguities within the policy framework (Matland, 1995). He further identifies and lists four policy implementation paradigms as low conflict-high ambiguity (experimental implementation), high conflict-high ambiguity (symbolic implementation), low conflict-low ambiguity (administrative implementation), and high conflict-low ambiguity (political implementation) (Matland (1995: 145). Figure 3.2 presents The ACM model. A significant shortcoming of the ACM is the lack of adequate consideration of democratic issues (Jaffee, 2001; deLeon and deLeon, 2002).

| | | CONFLICT | |
|-----------|------|---|---|
| | | Low | High |
| AMBIGUITY | LOW | Administrative Implementation Resources Example: Smallpox eradication | Political Implementation Power Example: Busing |
| | HIGH | Experimental Implementation Contextual Conditions Example: Head start | Symbolic Implementation Coalition Strength Example: Community action agencies |

Figure 3.2: Ambiguity-Conflict Matrix (ACM)
 SOURCE: Matland (1995)

Implementation studies have leaned towards accepting more contextual and democratic approaches (Henry, 2006; Greene, 2006; Nilson, 2020). An increasing number of advocates have called for more use of qualitative methods to present evidence of addressing complex contextual and pluralistic issues. Nilson (2020) produced a comprehensive chart of relevant theoretical approaches in implementation studies and highlighted their interrelationships. Figure 3.3 shows Nilson's framework of implementation theories and models.

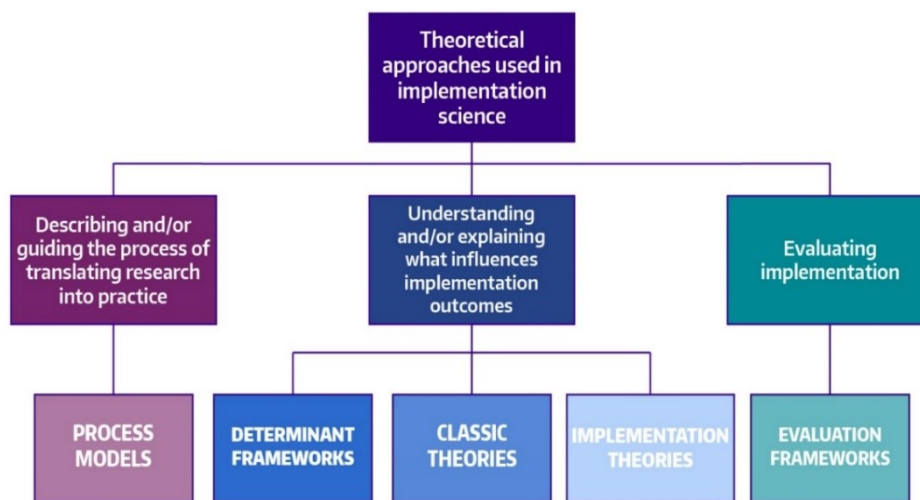


Figure 3.3: Implementation Theories, Models, and Frameworks
(Source: Nilson, 2020)

The Impact Assessment process combines inputs from relevant implementation theories during its execution. The various stages of the EIA process make use of the Process Model described by Nilson (2020), and the Determinants Frameworks expressed in his design are mainly helpful in building an understanding of the practical process and effects (outcomes) emanating from the use and practice of EIA and impact assessment in general. The Evaluation of various EIA outputs and its implementation processes frequently use the Evaluation frameworks whose theoretical background was explained earlier in Section 3.3. The concepts of EIA and HIA are broadly embraced and rooted in various evaluation and policy implementation theoretical frameworks. This research embraces a more democratic and realistic standpoint in its overall approach. The analysis of the EIA implementation process shall take inputs from the ACM matrix and look at aspects of administrative

implementation as well as political and socio-political issues influencing the implementation process. Conflicting policy frameworks from duplicating or overlapping regulatory guidelines will also be assessed and analysed.

CHAPTER FOUR

Research Methodology

4.1 Introduction

This chapter presents the various approaches used in generating data for the research. It details the overall philosophical framework, the basic methodological principles, the research approach, and the various methods and data generation techniques adopted for the research. The chapter also discusses the techniques adopted to analyse the generated data. It also discusses the overall research paradigm and the underpinning philosophical principle of the research. It relates the underpinning philosophical principle to how appropriate methods are chosen to meet the research aim and objectives. To satisfactorily answer the research questions and meet the aim and objectives of the research, different studies were conducted and named as study 1, 2, 3 and 4.

Study one involved the systematic development of a checklist for Health Impact Assessment (HIA) screening that is contextually designed to address peculiar health issues within the Niger Delta Region. Study two involved the systematic review of available HIA guidance documents to identify gaps and generate evidence that helped establish the values of HIA. The outcome of Study Two established the background for developing a checklist or tool for evaluating the level or quality of health coverage in Integrated Impact Assessment (IIA) documents. Study three involved the identification and evaluation of EIA or ESHIA reports published within the Niger Delta region between 2007 and 2018. The evaluation process in Study Three followed a systematic literature search approach where both scholarly and grey literature were accessed. The identified impact assessment reports were charted and refined utilising appropriate inclusion/exclusion criteria. The study utilised the tool generated in study two to evaluate the refined samples further and identify common trends, challenges, and shortcomings.

The fourth and final study involved a qualitative interview conducted in the identified community where one of the previously evaluated EIAs was carried out. The study involved a semi-structured interview process involving the community dwellers of the

host community of the selected EIA and impact assessment practitioners within the region.

The chapter describes the methodological principle for the overall research and presents the methods used for data generation and analysis for each study in separate sections as sections.

4.2 Philosophical Model and Framework

In the build-up to the design of the proposal for this research, many questions, as recommended by Crotty (1998), were considered. These questions include:

- (i) The epistemology embedded in the theoretical framework, and which informs the research, such as objectivism, subjectivism, or constructivism.
- (ii) The theoretical perspective or philosophical stance which lies behind any methodology to be used, such as positivism, interpretivism, critical theory, etc.
- (iii) The methodology or strategically planned actions or procedures that will link methods to outcomes such as Ethnography, Surveys, Grounded Theory, Heuristic Inquiry, etc.
- (iv) The methods or techniques and procedures that could effectively align with the chosen methodology, such as questionnaires, interviews, focus group discussions, Thematic Analysis, content analysis, etc.

The research aim informs the philosophical perspective of this research, which in turn is linked to the challenges and gaps that the researcher encountered during his previous research work and his experience of working with impact assessment practitioners in the Niger Delta region. As a new researcher searching for knowledge and working on strengthening the practice of health impact assessment within the country, the researcher had the privilege of interacting with policy decision-makers in the health sector, community dwellers, and health impact assessment practitioners. At the time, the practice of health impact assessment was unpopular, and there was a need for awareness creation and deliberate government intervention. The researcher's lived experiences of having studied in the Niger Delta region as an

undergraduate student also added to his understanding of the health impacts that could emanate from the numerous oil exploration activities of oil companies. Despite the low level of awareness and the prevailing health impacts from oil exploration, health impact assessment was graded (by most regulators) as adequately covered in IIAs or ESHIAs commissioned by oil companies. Such an assumption aroused the researcher's curiosity to investigate whether health impacts are sacrificed in a bid to integrate all impacts into one integrated document. This research aims to find out how health impacts are covered in integrated impact assessment documents in the Nigerian Niger Delta region.

To achieve the research aim, the researcher will evaluate and seeks ways to improve the use and implementation of Integrated Impact Assessment processes in the Nigerian Niger Delta Region with special reference to Health Impact Assessment. Understanding the process would enable the researcher to understand the level of health coverage and the ways to improve it.

The constructivist epistemological perspective influenced the researcher's approach. Crotty (1998) suggests a strong correlation between a researcher's epistemological or ontological views and the adopted theoretical stance, methods, and methodologies. The researcher's choice of methods and methodologies were influenced by carefully considering the critical points and adopting a broad range of assumptions, which are, in turn, influenced by the researcher's constructivist approach.

Creswell (2003) suggests three elements of inquiry that combine to form different research approaches: knowledge claims that the researcher is making, the strategies of inquiry that will form the procedure, and the methods of data collection and Analysis in use. Whereas the second and third elements are associated with the methodologies and methods applied by the researcher, the first element involves certain assumptions {alternative knowledge claims (Lincoln and Guba, 2000; Schwandt, 2007;)} made before and during the research process. These assumptions collectively influenced the research approach and informed the researcher's stance on a constructivist perspective.

These are certain assumptions and claims made by the researcher in preparation for the research. They include assumptions such as 'how' and 'what' that will be learned

from the research. Such claims might be called paradigms (Lincoln and Guba, 2000; Mertens, 1998), philosophical assumptions, epistemologies, and ontologies (Crotty, 1998), or broadly conceived research methodologies (Neuman, 2000). In general, philosophical researchers make claims about what knowledge is, how we know it, what values it has, how we write about it, and the process of studying it (Creswell, 1994). For this research, the researcher addresses these knowledge claims under the following philosophical positions: Ontology, Epistemology, Axiology, and Methodology.

Ontology encompasses the philosophy or the study of being in general or the philosophical study of what applies naturally to everything real (Simon, 2015; Gray, 2018). Creswell (2007) termed it an inquiry into the nature of reality. It comes from the Greek word - ontos, meaning being, and logos, meaning study. Incidentally, every research emanates from an assumed knowledge of being and the world. The researcher assumed that multiple realities exist and depend on the individuals (Guba, 1996). He aligns himself with the relativist's view of reality, which suggests that "realities exist in the form of multiple mental constructions, socially and experimentally based, local and specific, dependent for their form and content on the person who holds them (Lincoln *et al.*, 2011:102.)

The researcher assumes that the knowledge of the processes of IIA is vested in individuals involved in the process, and such knowledge comes from individual and collective reconstructions. This relativist research position on the existence of local and specific co-constructed realities is principally a constructivist viewpoint, hence his adoption of a constructivist philosophical approach.

The researcher's understanding of 'how knowledge could be studied' further influences the research approach. The word epistemology comes from the Greek word episteme, meaning knowledge, and logos, meaning study. Many authors have described it as encompassing the philosophy or the study of knowledge (Vogt, 1993). Like in Ontology, every research endeavour tends to have a philosophical leaning regarding how to obtain knowledge about the world rightly. The research philosophical leaning ensures that the approach taken in any given piece of research aligns with a particular epistemological persuasion (Sim and Wright, 2002). The constructivist philosophical leaning believes in people's ability to co-create findings and

constructively produce their understanding of reality (Guba and Lincoln, 1985; Guba and Lincoln, 2005; Gray, 2018). This further means that people can construct meaning based on their understanding of their surroundings. Subjectivism or transnationalism becomes a viewpoint because interactions between the respondents and the researcher through mutual reasoning and dialogue create knowledge (Guba and Lincoln, 1994).

The researcher's position on the philosophical theory of value also drove the research. Axiology is the study of value or goodness in its broadest sense. There is a distinction between intrinsic and extrinsic value, that is, between that which is valuable for its own sake and that which is valuable only as a means to something else. The researcher's knowledge or assumption of the value of the research outcome drove his inputs and approach to the research. His assumed value for the research outcome positioned the research towards a propositional or transactional axiological leaning, having believed that the outcome could be instrumentally valuable (extrinsic value) to better environmental or health outcomes (intrinsic value).

Beyond the above philosophical assumptions, paradigms, or knowledge claims and their possible influence on methodology, the overarching goal of any research is its ability to enhance knowledge. The researcher identified two significant approaches to enhancing knowledge: adding to existing knowledge, thereby filling the knowledge gap, or creating 'new knowledge' by exploring new areas to solve human problems (Sim and Wright, 2002). Whatever the intent, existing theories are crucial for adequately characterising research models and subsequent interpretation of data (Hartley, 1994).

Many researchers have described 'theory' as an organised set of interrelated concepts, ideas and propositions that are tested and could help to systematically explain and predict phenomena (Lunenburg, 2011; Kerlinger, 1986; Griffiths, 1988; Anfara and Mertz, 2015). Their ideas of theory bring about the interrelationship between theories, philosophical perspectives, and methodologies and their roles in research. Collins and Stockton (2018) highlight the central role of existing theory in qualitative research design and show their interrelation with other concepts such as the philosophical viewpoint, conceptual framework, epistemologies, and data interpretation. Although a researcher's philosophical perspective influences theory

selection and application, Glesne (2011: 5) suggests that most research studies are “informed by a higher-level theory, even though researchers sometimes are not aware of these theories because they are embedded in their assumptions about the nature of reality and knowledge”.

Others have also shown these phenomena' mutually interdependent nature (Wolcott, 1995; Doucet and Mauthner, 2002; Collins and Stockton, 2018). Theory motivates and guides the researcher on what to look for or ideas to explore. It is embedded in and forms the basis of the researcher's understanding of reality and knowledge (epistemology) and depends on the researcher's epistemological or ontological stance (mutually interrelated). Although theory directs the research approach, research provides findings that, in turn, form the theory (Lunenburg, 2011). Therefore, research could be either 'theory testing' or 'theory building' (Sim and Wright, 2002).

The researcher approached this research as a theory-building exercise and used an inductive approach (Sim and Wright, 2002) that seeks to build on an existing theoretical standpoint. Despite the acknowledgement and use of existing theories in the build-up to the research, the researcher was careful to avoid overreliance on theory. As Collins and Stockton (2018: 9) have observed, “overreliance on theory could prevent the salience and importance of data from coming through”. This aligns with Maxwell's (2013: 53) suggestion: "There are two main ways in which qualitative researchers often fail to make good use of existing theory: by not using it enough, and by using it too uncritically and exclusively”.

Table 4.1 summarises the philosophical approach and paradigms that guided the choice of methods for this research.

4.3 Methodological Principles

Methodology as a knowledge claim for this research involves all the applied methods through which the research aim was effectively addressed. It equally includes the justifications for the methods used. The aim of the research was to evaluate the use and implementation of Integrated Impact Assessment and improve the process in the Nigerian Niger Delta Region with especial reference to Health Impact Assessment.

Four studies were identified to help in attaining the aims and the objectives. These studies include:

1. Development of HIA screening tool for use in the Nigerian Niger delta region
2. The systematic review of HIA guidelines
3. The evaluation of systematically selected EIA/ESHIA reports in the Nigerian Niger delta region
4. The Detailed cross-sectional study of the practice of EIA and IIA in the region.

The first, second, and third studies utilised a systematic literature review process to systematically identify and analyse relevant documents from available literature. Detailed explanations of their respective methods are presented in subsequent subheads.

Table 4.1: Philosophical Approach and Paradigm (Source -Author)

| Philosophical approach and paradigm | | |
|--|---|---|
| Ontology | Constructivism (relativist philosophical understanding of reality) (Lincoln <i>et al.</i> , 2011; Guba and Lincoln, 2005) | |
| Epistemology | Constructivism (subjectivist philosophical perspective on “the study of knowledge”. (Guba and Lincoln, 2005; Gray, 2018) | |
| Theoretical perspective (the philosophical traditions) | Interpretive perspective (Crotty, 2003; Patton, 2002; Gray, 2018) | |
| Methods | Data collection Techniques | Systematic reviews, qualitative interviews supported with secondary data, documents, and field notes. |
| | Data Analysis techniques | Thematic Analysis, Content Analysis |
| Design | Cross sectional | |

4.4 Overall Research Approach and Design

The sole aim of research is to answer the research questions that motivated the research (Sackett and Wennberg, 1997; Sim and Wright, 2002). Research designs are, therefore, significantly influenced by research questions, and this research is not an exemption. Figure 4.1 presents the diagrammatic representation of the overall research design overview.

| | | | |
|---|--|---|---|
| AIM: To evaluate the use and implementation of Integrated Impact Assessment and improve the process in the Nigerian Niger Delta Region with especial reference to Health Impact Assessment. | | | |
| STUDY DESIGN: Explorative research using multimethod qualitative research strategy. | | | |
| OBJECTIVE 1 To develop and validate an evaluation tool/checklist for assessing the content and quality of Integrated Impact Assessment, especially in relation to the health content. | OBJECTIVE 2 To identify relevant and recent Integrated Impact Assessment carried out in the Nigerian Niger Delta region. | OBJECTIVE 3 To appraise the identified Integrated Impact Assessments (for content and quality) using the developed tool specifically designed for assessing the quality and health content of completed Integrated Impact Assessment. | OBJECTIVE 4 To recommend improvements to the IIA processes by developing guidelines health integration in ESHIA |
| METHODS COMMON TO FOUR OBJECTIVES: Direct Observations, Systematic Review of Literature, interviews, and Field notes, content analysis, thematic Analysis, Descriptive phonological analysis | | | |
| Method specific to Objective one: systematic Review of Literature, Field Notes, interviews. Content analysis | Method specific to Objective two: Review of Literature, direct observations, thematic analysis | Method specific to Objective three: Field notes, Analysis of Selected IIAs via Thematic Analysis, Analysis of inputs from field notes, and interviews. descriptive Phenological analysis. | Method specific to Objective four: Review of results from all studies. |

Figure 4.1: Summary of research approach and Methods of Data Generation and Analysis: Source: Author

The researcher must overcome limitations inherent in individual research methods using a detailed data generation and analytical process to produce valid and reliable results. Such desire leads the researcher to adopt an explorative approach using a multimethod qualitative research strategy. The flow chart in Figure 4.1 shows the various data generation methods for the overall research. The entire research was conducted in stages tagged Studies 1, 2, 3, and 4. Each study has strong interrelations with the others. All four studies used the qualitative data generation approach; subsequent headings explain details. The fourth study involved a detailed interview process, which required the administration of semi-structured interviews with respondents.

4.5 Qualitative Data Generation

Qualitative research is known to have the limitation of small sample sizes, although it enhances robust, deep, and detailed discussions. They provide ideographic descriptions that are well-off in facts, although, in most cases, narrowed to a small number of cases (McGivern, 2003). Methods used in most qualitative research involve collecting non-numeric data using interviews, group discussions, observations, and visits (McGivern, 2003). Qualitative research refers to both the techniques (of data collection or analysis) and the broader framework for conducting research or paradigm (Braun and Clarke, 2013). The research approach deals with the objectives of descriptive and exploratory research queries but can also apply to explanatory queries. The research paradigm or thought aligns with the belief that multiple versions of reality or knowledge exist.

Qualitative research findings are expressed in words rather than numbers and measurements. It focuses on detailed explanations of points, descriptions, and insights. It aims to get below the surface, beyond the spontaneous or rational response, to more profound and emotional responses. When using interviews as a means of data generation, the structure and content, or the design of the interview questions, is such that it probes deep into those data that could not have been covered using a questionnaire. The nature of this research is such that the researcher seeks to understand and explore the nature of health integration. Qualitative research methods enable the researcher to richly describe complex phenomena and track unanticipated or exceptional events (Sofaer, 1999). It enables the researcher to illuminate research participants' experiences and understanding of events.

4.5.1 Qualitative Data

During qualitative research, producing qualitative data involves generating, analysing, and interpreting non-numeric data using a broader qualitative research paradigm (Braun and Clarke, 2013). Data generation, analysis, and interpretation occur under a paradigm other than the traditional experimental or statistical techniques. It considers a broader framework of approaches, beliefs, assumptions, values, and practices commonly accepted within the qualitative research community (Braun and Clarke, 2013). Direct or indirect interviews, direct observations, focus group discussions,

analysis of artefacts, documents, and cultural records, and documentation of personal experiences can all produce Qualitative data (Mcleod, 2019; Carr, 1994). Typically, qualitative researchers try to understand how individuals interpret and perceive their social reality (Mcleod, 2019). Qualitative data, therefore, are non-numeric data such as text, photographs, video, or audio recordings collected during in-depth interviews, diary accounts, focus group discussions, etc.

This research adopted the qualitative research approach because of its ability to discover how people give meaning to their experiences (Merriam, 1998). In choosing the qualitative approach, the researcher tried to align the researcher's underpinning belief system with the research aim. The phenomenological principle of understanding how research participants understand the research subject was adopted. This principle in qualitative research helps identify the core experiences of a small number of subjects with the phenomenon under review (Creswell, 2003). Consequently, it is possible to draw new patterns, give new meaning to the identified patterns and relationships, and ultimately build new knowledge or theory (Moustakas, 1994). The procedures associated with qualitative research approaches used in this study are further described below, including semi-structured interviews, a purposive sampling technique, systematic data collection, and data analysis.

4.5.2 Selection of Data Generation Approach

The choice of data generation approach has the potential to influence research outcomes and is therefore essential in research design. In choosing the data generation approach for this research, the researcher adopted the best approach that satisfies the aim and objectives of the overall research. Each study utilised a unique approach that best suited the desired objective. Studies 1, 2, and 3 utilised a systematic review approach to identify relevant documents and analyse them for content, trend, and value. The use of interviews was adopted for Study 4 because it allowed the researcher to collate more robust, deep, and detailed information from appropriately sampled and selected respondents. Interviews as a research approach have been used extensively in qualitative research to satisfy similar research requirements (Badr, 2009; Loomis and Dziedzic, 2018; Khosravi, 2019).

4.5.3 Section One: Methods of Data Generation for Study One

The method used in study one involved a systematic review of relevant literature on screening tools to identify existing gaps using the Joanna Briggs Institute approach for systematic reviews (Santos *et al.*, 2018). Developing a new screening tool to address existing gaps followed the systematic review in study one. Finally, the developed tool was put through a testing and evaluation process to validate it.

4.5.3.1 Systematic Review of Existing Screening Tools.

A systematic review of existing screening tools helped to identify existing gaps. The review, which strictly adhered to the principle of good practice for systematic reviews, involved the search from electronic databases (Web of Science, PubMed, ProQuest, Google Scholar, and EBSCO). Supplementary searches of dedicated HIA websites, such as WHO HIA, HIA Connect, and HIA Gateway, were carried out to capture data from other grey literature and other dedicated websites. Finally, the research used the Google search engine to capture data from all other primary sources or grey literature.

Table 4.2: Search terms and definition of HIA (Study One)

| | |
|--|-----------------|
| SEARCH TERMS: | |
| ➤ Health Impact Assessment Checklist | - HIA Checklist |
| ➤ Health Impact Assessment toolkit | - HIA Toolkit |
| ➤ Health Impact Assessment tool | - HIA Tool |
| ➤ Health Impact assessment guide | - HIA Guide |
| Definition of HIA. | |
| ➤ Combination of procedures, methods, and tools by which a policy, programme or project may be judged as to its potential effects on the health of the population, and the distribution of those effects within the population. (WHO European Centre for Health Policy, 1999). | |

Table 4.3: Inclusion and exclusion criteria (Study One)

| Inclusion criteria | Exclusion criteria |
|---|--|
| HIA Screening tools from English language documents | HIA Screening tools from non-English language documents |
| Dates - any year | HIA Screening tools from Documents with incomplete information on HIA screening processes. |
| HIA Screening tools from Published articles containing detailed information on HIA procedure and HIA methodologies. | HIA Screening tools from other forms of impact assessment or from an existing HIA reports |
| HIA Screening tools from grey literature reports, and guides containing detailed information on HIA process to allow someone with minimal additional instruction to conduct an HIA | HIA screening tools whose underpinning approach does not meet the broader definition of HIA. |
| | HIA Screening tools from Specific case studies, clinical trials, or epidemiological studies |

The search was guided by a list of predetermined search terms, as shown in Table 4.2. These search terms focused on HIA, toolkits, and checklists. A total of 233 records were shortlisted from the first search of the selected databases, while 224 records were shortlisted from HIA-dedicated websites (WHO HIA, HIA Connect, and HIA Gateway). Seventy-two records were shortlisted from the Google search engine. A list of predefined inclusion and exclusion criteria guided the entire selection process. Table 4.3 presents the inclusion and exclusion criteria.

The outputs from the first selection stage were subsequently and iteratively screening processes. These involved duplicate removal, abstract reading, and two stages of eligibility checks. The stages for these screening processes are presented in the systematic review and meta-analysis flow diagram. Figure 4.2 presents the flow diagram for the meta-analysis. These iterative screening processes helped reduce the number of records accepted for onward review to 31 HIA screening tools or guides.

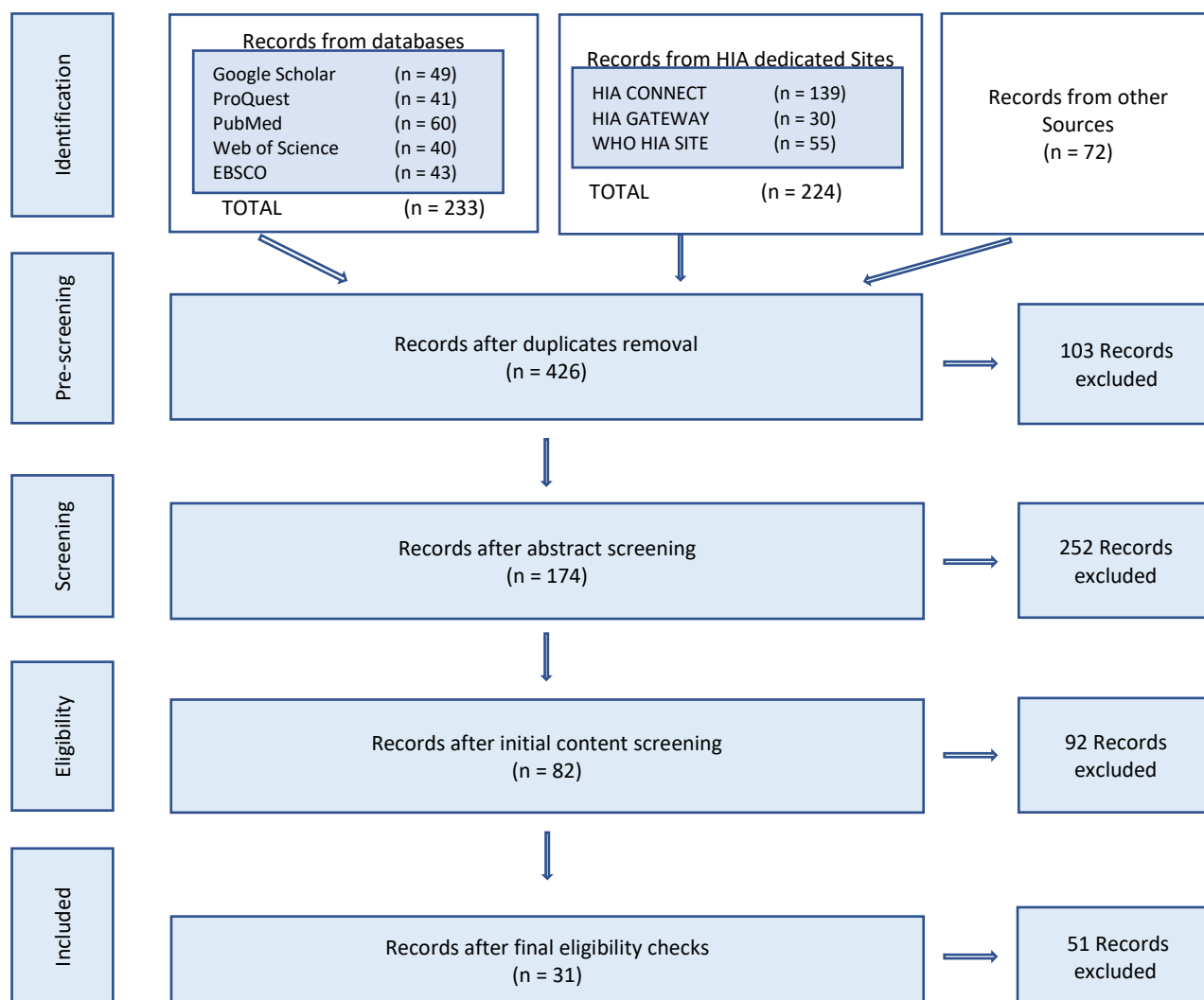


Figure 4.2: Flow Diagram: Screening Stages for Systematic Review (Study One)

The inclusion criteria excluded screening tools from published HIA reports. This exclusion is because checklists used in published reports could be specifically designed for those projects and may not be suited for generalised usage. Also, the report might have utilised a checklist from an already published guide.

4.5.3.2: Analysis and Characteristics of Selected Screening Tools.

The included articles were analysed in study one using content analysis to check patterns and structure and closely examine and understand the contents of included articles. The method in use was chosen based on its flexibility to suit the specific design and its ability to enable the research to have a focused and structured examination of the contents and their meaning (Maier, 2017). This study's data comes

from historical records of screening tools. Content analysis enables the researcher to analyse documented data effectively to find new, reliable evidence (Harwood & Garry, 2003; Maier, 2017). Some researchers have criticised content analysis for “disregarding context” (Harwood & Garry, 2003; Maier, 2017); however, this study is not generating primary data, and the focus is therefore not mainly on context but on detailed analysis of textual content to inform the production of a new screening tool. Included screening tools were analysed for method of presentation, details of determinants of health covered, and response format/ grading system used. The entire data set was coded manually, and colour coding was used to identify key characteristics of interest. The deductive coding approach helped to identify trends using predetermined themes.

A review of the finally selected 31 HIA screening tools showed that 24 (77.4%) of them were presented as checklists to be filled out by those conducting the screening, while 7 (22.6%) were in the form of generic guides. Most checklists consisted of ‘Yes’, ‘No’ and ‘Unknown’ options and a list of potential health impacts. Others presented the determinants of health (mainly based on Whitehead and Dahlgren’s (1991) propositions) as options for the user to choose the determinants that may be affected by the proposed project. Some reviewed tools also had a grading system for the user to assess the level or degree of potential impact on the affected determinant of health.

Generally, the tools reviewed identified the value and possibility of carrying out the HIA as the leading assessment indices. While Metcalfe et al. (2009) and Bhatia (2010) included questions on the availability of resources for HIA, McCallum *et al.* (2016) emphasised the need for a balance between value and investment. McCallum et al. (2016) argued that it is practically unjustifiable to develop a great tool whose usage is not feasible due to the imbalance of value and investment. Most reviewed tools covered questions on potential positive and negative impacts and impacts on vulnerable and disadvantaged groups. Some tools went further to include questions on social exclusion, size/coverage of the proposed programme, and effects on social cohesion. This research became necessary given that no screening tool has focused broadly on the potential adverse health impacts from indirect sources, such as politically motivated conflicts resulting from implementing a project or programme whose direct impacts are not harmful. In addition, provisions are not made to consider

potential health impacts that may result from the abandonment or non-completion of projects in the reviewed screening tools. Several authors have noted the alarming rate and proliferation of abandoned projects in developing countries (Ihuah and Benebo, 2014; Nzekwe *et al.*, 2015; Damoah, 2015; Okereke, 2017; Williams, 2017). They have also highlighted the attendant effects of these abandonments, including accidents and death (Ihuah and Benebo, 2014; Nzekwe *et al.*, 2015; Damoah, 2015). Although many emphases have been placed on the economic and environmental cost of such abandonments, the cost to human health must be considered. This research recognises health impacts that may occur because of the abandonment of projects or programmes, hence developing a screening tool to account for such a scenario. The new screening tool will also focus on possible health impacts from unintended and indirect sources such as political, religious, or socio-culturally motivated disagreements or conflicts.

4.5.4 Section Two: Methods of Data Generation for Study Two

Study 2 systematically evaluates the characteristics of HIA guidelines and highlights their suitability in addressing peculiar health issues in developing countries. It also identifies the extent to which the available guidelines recommend HIA for integration with other forms of impact assessments. The work further details the requirements for a standardised HIA process and develops a checklist to assess the level of coverage of health concerns in integrated impact assessment.

4.5.4.1 Methods

The method adopted was a systematic content review of relevant literature, including primary and grey literature. The documents of interest included journal articles, guidelines, guides, or toolkits associated with HIA practice globally and in developing countries. For this study and given the multiplicity of names used in addressing these guidelines, the selected guidelines, guides, or toolkits will henceforth be referred to as “document”. The methodology followed the guidelines of the Johanna Briggs Institute (JBI) and the Methodological Expectations of Cochrane Intervention Reviews (MECIR) (Aromataris and Riitano, 2014; Santos *et al.*, 2018). Both guidelines require strict adherence to a priori protocol, which requires detailed planning to ensure that designed methods can satisfy previously developed questions.

To cover all aspects of HIA and given HIA's multidisciplinary and multi-sectoral nature, the study utilised five different databases for the search: Web of Science, PubMed, ProQuest, Google Scholar, and EBSCO. These databases cover a wide range of issues on environmental health and other related issues of human health management. Supplementary searches of dedicated HIA websites such as WHO HIA, HIA Connect, and HIA Gateway ensured that the search captured other grey literature and national guidelines. The Google search engine helped to capture more documents that may have been excluded. The combination of many search approaches and databases ensured that a wide range of multidisciplinary and multi-sectoral publications from all aspects of environmental and health studies were covered. It also ensured that high-quality publications from relevant peer-reviewed scientific journals and books were adequately covered. Standardised inclusion and exclusion criteria were developed for the search, and the same search criteria were used for all the

search engines and databases. The inclusion and exclusion criteria are presented in Table 4.4.

Table 4.4: Inclusion and Exclusion Criteria (Study Two)

| Inclusion criteria | Exclusion criteria |
|---|--|
| English language documents | Non-English language documents |
| Dates – 1995 to May 2018 (to include wide range of documents from the early years of HIA advocacy) | |
| Grey literature reports, guides and guidance documents containing enough detailed information on HIA processes and capable of guiding a none HIA experienced person towards conducting HIA. | Documents with incomplete information on HIA processes. |
| HIA procedures and methodology whose underpinning approach meets a broad definition of HIA. | HIA tools whose underpinning approach does not meet the broader definition of HIA. |
| Publications which are the most recent or comprehensive version of HIA guide. The most current edition supersedes the older edition even if it meets all other inclusion requirements. | Specific case studies, clinical trials, or epidemiological studies |
| | Document focusing only on one aspect of HIA such as ‘scoping’. |

The study's inclusion criteria recommended only materials published in the English language. The criteria made provision for a broader range in years of publication to accommodate documents published in the early years of HIA advocacy. The exclusion criteria excluded documents with incomplete information on HIA screening processes and tools whose underpinning Ideologies cannot meet the broader definition of HIA.

Since most publicly available guides are guidance documents from government-sponsored research studies (not entirely peer-reviewed articles), the quality assessment procedure was relaxed to include all published guidance documents. The relaxation helped to enhance the objectivity of the study.

Table 4.5 comprises the search terms used in data gathering and the broader definition of HIA, which is the adopted definition of HIA for this research work. The search terms were chosen to enhance the selection of material related to health impact assessment.

Table 4.5: Search Terms and Definition of Health (Study Two)

- **Health Impact Assessment Checklist**
- **Health Impact Assessment toolkit**
- **Health Impact Assessment tool**
- **Health Impact assessment guide**
- **Health Impact assessment guidelines**

Definition of HIA.

“Combination of procedures, methods, and tools by which a policy, programme or project may be judged as to its potential effects on the health of the population, and the distribution of those effects within the population.” (WHO European Centre for Health Policy, 1999: 2).

4.5.4.2 Analysis

On completion of the final screening exercise, the selected documents were subjected to detailed evaluation following review standards from similar reviews (Hebert *et al.*, 2012; Mindell *et al.*, 2008; McCallum *et al.*, 2015). As in a similar analysis referenced in study one, Content analysis was used to analyse and examine data. Reasons similar to those stated in Section 4.5.3.2 informed the use of content analysis. Guidance documents were analysed based on various characteristics, including the title, name of publishers, location, year of publication, and document length. Other characteristics of interest include the format, the steps, the focus, the level, and the type of HIA. The coding of the entire data was completed manually, and colour coding ensured that key characteristics of interest were identified. Coding for the data set was done deductively, meaning there were some predetermined themes, such as the “characteristic of interest” to which information within the data relating to those characteristics was coded. In addition to the deductive approach, inductively identified themes were also generated from the outcome of the coding process.

The stages adopted for the coding process include.

- a) Reading through the data to familiarise and understand how to sign codes.
- b) To go through the data in details – line by line – to get all related codes.
- c) To categorise codes and organise the coding frame.

d) To link codes with related themes.

The a priori identified characteristics of interest guided the coding process. Specific features such as the definition of HIA used, the principles or values of HIA, provisions for integration with other impact assessment tools, and considerations for equity were also analysed. Other features of the analysis are the inclusion of supporting policy, resources, documents or links, and explanations for the determinants of health.

Other specific features considered are community engagement, steering group, and the need for community profiling (demographic) and community health profiling. The use of case studies to elaborate the procedures and the development and attachment of developed checklists (screening or scoping checklists) are also areas of interest. In summary, a content analysis of all unique characteristics of the final documents was carried out.

4.5.4.3 Selection of Final Documents for Inclusion

The first set of searches from the different databases generated quite a large volume of data: Google Scholar (23,700), Web of Science (1144), PubMed (357), ProQuest (1,252), and EBSCO (2,542). Three hundred and thirty-four (334) documents were shortlisted based on the relevance of their topics and abstracts. In addition, 224 records were shortlisted from the HIA-dedicated websites (WHO HIA, HIA Connect, and HIA Gateway), and 72 were shortlisted from the Google search engine. The selection process was guided by predefined inclusion and exclusion criteria, as listed in Table 4.4. The outputs from the first selection stage were introduced to further screening stages of duplicate removal, abstract reading, and two stages of eligibility checks. The screening procedure followed the stages illustrated in the systematic review and meta-analysis flow diagram (Peters *et al.*, 2015) shown in Figure 4.3. The iterative screening procedure reduced the number of records deemed fit for the final review to 59 HIA documents.

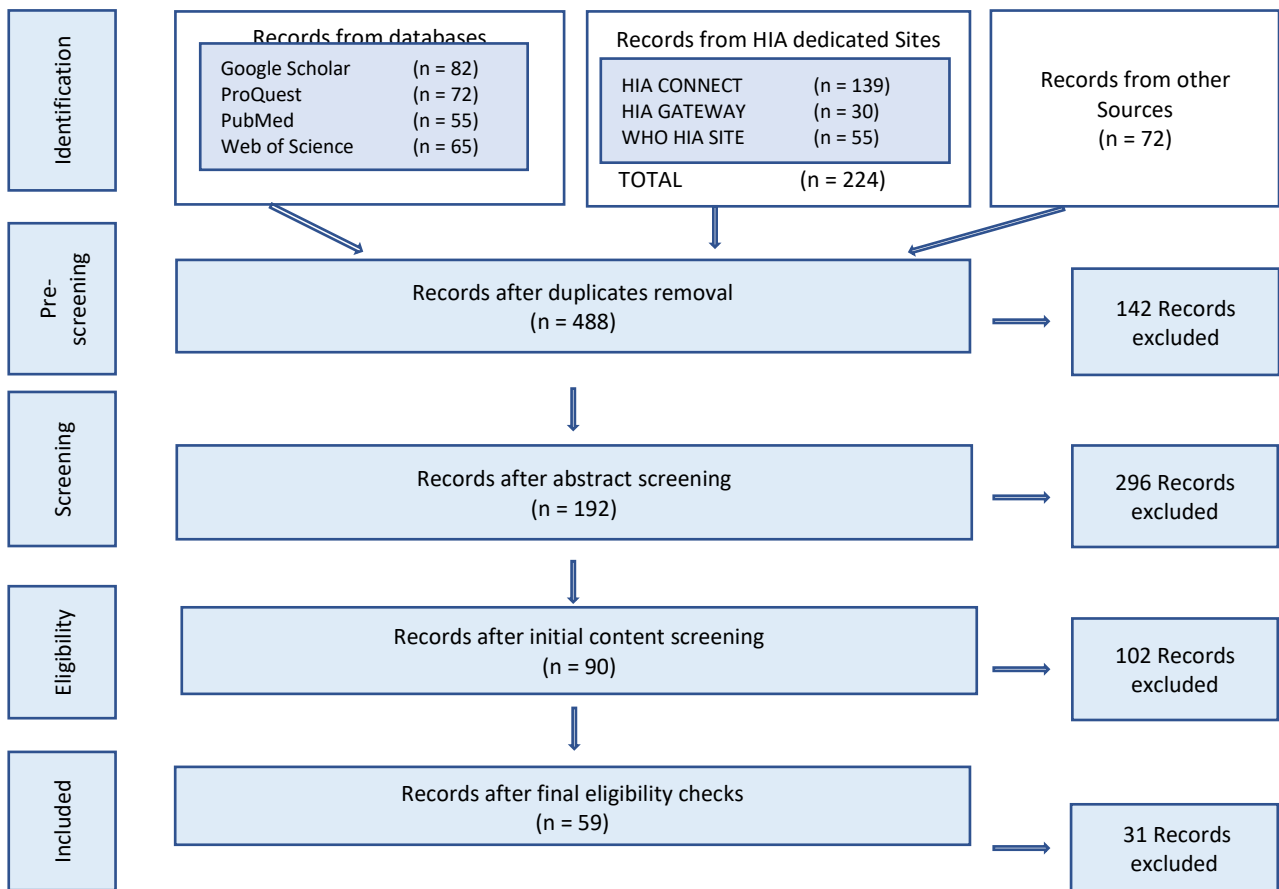


Figure 4.3: Flow Diagram: Screening Stages for Systematic Review (Study Two)

4.5.5 Section Three: Methods of Data Generation for Study Three

Study three systematically evaluated completed ESHIA reports from the Niger Delta region to identify trends and challenges in the impact assessment process. The study was necessary to provide a background on the quality and nature of completed impact assessments in the region. This background helped shape the researcher's perspective on the mode of practice before engaging with respondents in the field. The study's outcome also helped ascertain the validity of claims made in earlier evaluated EIA reports compared to the reality of practice observed in the field.

4.5.5.1 Methods

A select number of IIAs ESHIAs or EIAs were analysed using the standardised evaluation tools and a previously developed tool (Appendix A) to understand the level of coverage of health concerns in statutory impact assessment reports in the region of focus (Miron, 2004). Data was taken from 20 screened EIA reports and documents published between 2009 and 2019. This period marks the implementation stage of the current environmental regulations, published in the Federal Republic of Nigeria official gazette. Within the National EIA regulatory framework, different sectors have different implementation periods for their respective regulatory guidelines. The researcher made efforts to ensure that included reports are reports produced within the implementation period of their latest regulatory guideline to ensure compliance with the latest regulatory guidelines. Appendix J shows an overview of the included documents. The dates so chosen ensured that the included documents were current and produced within the guidance of the latest regulatory guidelines.

The researcher used four major databases to search for included data. These databases include Web of Science, PubMed, Google Scholar, and EBSCO. These databases covered a wide range of issues on environmental health and other related issues of human health management. Additional searches were completed on websites dedicated to IIAs and EIAs, such as IAIA, the Federal Ministry of Environments (EIA division) website and the Association for Environmental Impact Assessment of Nigeria (AEIAN) website. The need to use dedicated websites was to capture reports that may have been published within those websites but not shared with other databases. The Google search engines (Google Scholar and Google

Search) also helped to capture more primary or grey literature that may have been excluded. Relevant international organisation’s websites, such as the WHO and the World Bank, were also searched for published reports. Combining these search approaches enhanced the coverage of all relevant documents, enhancing the study's objectivity. Letters to regulatory bodies, companies and colleagues with copyright ownership requested additional reports. Such outreach further ensured that the research covered quality reports that were not publicly published.

The report screening process used carefully crafted inclusion and exclusion criteria. Table 4.6 presents the inclusion and exclusion criteria. The inclusion criteria included reports published in the English language and published between 2008 and 2018. Also accepted as part of the inclusion criteria were comprehensive reports whose scope includes all impact assessments and reports completed and approved. Other inclusion criteria included prospective reports, impact assessment reports (Example: IIAs or EIAs or SEAs) and reports of projects located within the Niger Delta Region. In summary, the screening process excluded all reports that could not meet the inclusion criteria.

Table 4.6: Inclusion and Exclusion Criteria (Study Three)

| Inclusion criteria | Exclusion criteria |
|--|--|
| English language documents | Non-English language documents |
| Dates – 2008 to 2018 (to include mostly current documents that are produced under the current legislative guidelines) | Dated outside the specified period |
| Comprehensive or in-depth reports which have been commissioned to cover all forms of impacts exhaustively | Non-Comprehensive Reports (Desktop, Rapid or Intermediate) |
| Reports whose scope includes the assessment of Environment, Social and Health Impacts (i.e., Integration of all impacts) | Report with limited scope (focusing solely on one type of impact such as Health, social or Environment) |
| Complete Reports: Reports that are deemed to have been fully completed and signed | Incomplete reports: Reports that are yet to be completed or have been stopped halfway. |
| Completed and Approved reports (Reports that had been approved by the relevant regulating body) | Reports that could not attract the approval of the relevant regulating body |
| Reports of projects that are located within the region or study area of interest | Reports of projects that do not fall within the region or study area of interest (The Niger Delta Region of Nigeria) |
| Impact assessments Report (Example: IIAs, EIAs or SEAs) | Non-Assessment Reports (e.g., Environmental Management Reports etc.) |
| Prospective Reports | Non-Prospective Report (Concurrent or retrospective) |

Search terms were explicitly identified and used in all the searches. The search terms (Table 4.7) include environmental impact assessment report, integrated impact assessment report, and strategic environmental assessment report.

Table 4.7: Search Terms for study three (Study Three)

| | |
|---|---|
| <ul style="list-style-type: none"> • Environmental Impact Assessment Report. • Integrated Impact Assessment Report. • Strategic Environmental Assessment Report. | <ul style="list-style-type: none"> • EIA Report. • IIA Report. • SEA Report. |
|---|---|

4.5.5.2 Coding and Analysis

Study three was analysed using a thematic analytical approach to explore and evaluate the content of the reports with reference to their coverage of health issues. It involved a deductive thematic analysis of key themes relating to the level of health coverage in Integrated Impact Assessment or Environmental Impact Assessment (as practised in the country). Data analysis used computer-assisted qualitative data analysis software (CAQDAS). The specific CAQDAS programme used was the Nvivo Scientific software (2020 version). Coding for the research started after the completion of the initial data management processes and followed the subsequent uploading of data into the Nvivo Scientific software. The coding process utilised themes that were a priori determined. The deductive approach enabled the researcher to focus primarily but only partially on areas relevant to health concerns (as identified in the themes). Although the research is theory-based and has primarily adopted a deductive approach, it also embraces some inductive and data-based dispositions. This inductive disposition allows for some additional themes to emanate from the data. The flexibility further ensures that areas that all areas are adequately covered.

Reports included in the evaluation were approved by their relevant regulating bodies and published between 2009 and 2018. The study finally included nineteen (19) reports after a reiterative screening procedure. The overarching legal frameworks for the included reports were the Federal Environmental Protection Agency Act of 1988 and the EIA Decree No. 86 of 1992. These legislations have led to the reproduction of various local and sectoral guidelines for Impact assessment regulation in the country.

4.5.6 Section Four: Method of Data Collection for Study Four - Interviews

An interview, in general, could be seen as a conversation between two or more individuals, with the researcher intending to gather information (Gubrium and Holstein, 2001). It is a functional qualitative research approach and involves a conversation between the interviewer(s) and the interviewee(s) where the interviewer tries to explore the interviewees' perspectives on a particular idea, program, or situation (Boyce and Neale, 2006). The interviewer coordinates the interview process and asks questions relevant to the research. It is a valuable tool for collecting in-depth information about the interviewee's opinion, feelings, thoughts, and experiences.

One advantage of the interview process over other data collection methods is that it gives room for more detailed information about the research question (Boyce and Neale, 2006). It also allows the researcher to have direct control over the process, which means he/she can have the chance to clarify issues, if need be, and probe for more profound insight. Despite its merits, it also has the disadvantage of requiring a longer time for planning and setting up. Reaching an agreement with prospective interviewees on the appropriate time and venue for the interview could also be challenging.

4.5.6.1. Types and Formats of Interviews

Research Interviews could come in structured, semi-structured, and unstructured formats. Structured interviews come with organised and pre-determined questions for the interviewees to answer in a particular order. This structured format makes data analysis more straightforward, given that the researcher can quickly analyse the similarities and differences between the answers given.

Unstructured interviews, however, do not require any pre-determined questions. Data collection is informal in unstructured interviews, making the interview process more susceptible to bias. With unstructured interviews, comparing the views given by different respondents may be difficult, given that the interview flow in each case might be different. Semi-structured interviews fall in between structured and unstructured interviews. They combine elements of both interview forms and, therefore, benefit from

each approach's merits. In semi-structured interviews, the researcher can present the same set of prepared questions to all the interviewees and, at the same time, present some probing or ask additional questions as the interviews proceed. Additional questions could be needed to clarify, expand, or explain specific issues. This research utilised the semi-structured approach. This approach enables the researcher to control the interview flow by providing previously selected interview questions while having the flexibility to probe for more detail during the interview.

4.5.6.2 Interview Planning

As required in this research, conducting an in-depth semi-structured interview followed a rigorous planning process. The planning stage involved identifying stakeholders, the types and sources of relevant information, and the potential interviewees. In this case, the identified stakeholders included the researcher and the research supervisory team. It also included the recruited assistant who helped in coordinating interviewees, the impact assessment practitioners within the Niger Delta region, and the practitioners that were involved in the selected report. Others included the community members of Otueke, the community leaders of Otueke, Members of the FUIO university community, and any other informant with relevant information within the Niger Delta region.

The overarching aim of identifying the types and sources of information was to satisfy the aim and objectives of the research. The type of information needed targeted the relevant experiences of the impact assessment practitioners and other stakeholders. The targeted respondents were members of the earlier listed stakeholder groups. They were the stakeholders whom the researcher felt would have the relevant experience and knowledge to give responses that would best satisfy the research question. There were provisions to identify additional interviewees during data collection. The selection of stakeholder groups and respondents utilised a purposive sampling approach. However, individual participants from the group were randomly approached based on contact availability and consent. The sample size depended on the attainment of saturation. The research supervisory team decided on considerations for data sufficiency. The sampling section gives a more detailed explanation of the sampling approach used. The researcher diligently followed the university's ethical standards at each step.

4.5.6.3 The Semi-Structured Interview

Based on the researcher's knowledge of EIA/HIA practice in Nigeria and the experience and recommendations of the supervisory team, the semi-structured approach was considered appropriate for data generation. The approach involved the administration of interviews with professional impact assessment practitioners in the Niger Delta region. Interviewees also included community dwellers within the project area of the selected report. The referenced report, selected from the outcome of study three, was the EIA report of the Federal University of Otuoke. Therefore, the community dwellers included in the interview process were selected members of the Otuoke community and members of the FOU University community.

The semi-structured approach ensures that the researcher presents a set of standardised and pre-determined questions to the interviewees while also having the ability and flexibility to probe for more details and deeper insight (Miles and Huberman, 1994). The approach allows participants to answer questions based on what is important to them (Strauss and Corbin, 1998) and enables them to control the flow and introduction of topics (Mishler, 1986). The research team agreed that this approach would enable the researcher to probe in-depth for respondents' opinions and perceptions of complex and straightforward issues (Barriball and While 1994). The approach is also appropriate when investigating emotionally sensitive issues (Åstedt-Kurki and Heikkinen, 1994). The approach was chosen as the most appropriate when participants have low subject knowledge and awareness (Kallio *et al.*, 2016; Åstedt-Kurki and Heikkinen, 1994) or "when there were issues that participants were not used to talking about, such as values, intentions and ideals" (Kallio *et al.*, 2016: 2959). Despite its flexibility, the approach also allowed the researcher to focus on issues that interested the participants. The flexibility encouraged the expression of diverse perceptions (Cridland *et al.*, 2015). For this study, the interviewees comprised two sets of respondents: the practitioners and the community dwellers. The researcher presented two sets of interview questions to the interviewees. The community dwellers received the first set, while the impact assessment practitioners received the second set.

4.5.6.4 The Interview Method

This aspect of the research coincided with the COVID-19 pandemic that affected global travel. The initial design of the interview protocol was a face-to-face interview where the interviewee would meet with the interviewer to take the interview. The choice of the face-to-face interview was because of the assumption that the researcher would be able to get more detailed and in-depth responses from the interviewees in face-to-face contact. However, the researcher also recognised the possibility of unconscious bias from minute influences such as the interviewer's reaction to responses or the interviewer's dressing or mannerisms. The challenges of choosing an appropriate time and environment for the interview and other sources of biases are associated with face-to-face interviews. The first face-to-face interview choice was no longer feasible with the recent pandemic and subsequent global travel ban. The research team, in full compliance with the ethical guidance of the university, opted for the telephone interview as an alternative approach. It is also worth noting that the telephone interview helped to eliminate some of the above-noted biases traditionally associated with face-to-face interviews.

The telephone interview as a qualitative research approach was often portrayed as less attractive than face-to-face interviews (Braun and Clarke, 2013). The absence of visual cues could hinder rapport, probing, and interpretation of responses. In recent years, the telephone interview has the potential to produce detailed and high-quality data (Carr and Worth, 2001; Rosenberger, 2010; Braun and Clarke, 2013; Kee and Schrock, 2020). The telephone interview process still ensures that the interviewer has direct control of the process and can probe for more detailed and exhaustive answers while eliminating undue influences such as the interviewer's reactions to responses, body language and influences from appearance, dressing or general presentation. Non-visual cues such as exclamations and intonations can establish context. The telephone interview process can improve the ability of interviewees to be relaxed and able to disclose sensitive information, while there is no substantive evidence that the process leads to the production of low-quality data (Braun and Clarke, 2013; Boyce and Neale, 2006). McCoyd and Kerson (2006: 399) state that telephones enable interviewees to be on "their own turf," which further enhances privacy and anonymity, reduces undue social influences and pressure, and increases rapport (Novick, 2008).

Table 4.8 shows some of the merits and demerits of using the telephone interview as a data-generating approach compared to face-to-face interviews.

Table 4.8: Merits and Demerits of Telephone Interview

| Merits | Demerits |
|---|---|
| Decreased cost as there are no travel and accommodation cost. | Absence of visual cues |
| Increased access to geographically disparate subjects | Lack of telephone coverage for some participants |
| Decreased space requirements | The potential for distraction of participants by activities in their environments, although this may also occur during face-to-face interviews. |
| Increased interviewer safety | Telephone interviews must be kept short compared to face-to-face interviews which may thereby reduce in-depth discussion. |
| The ability to take notes unobtrusively | |
| Permit more anonymity | |

4.5.6.5 The Design of Instrument

The developed interview protocol helped to guide the interview process to ensure consistency and improve the reliability of the findings. The link between the quality of data obtained and the interview protocol used is very significant. Yeong et al. (2018:1) state that “a reliable interview protocol is the key to obtaining good quality interview data”. In designing the interview protocol, the researcher followed the guideline of the standardised Interview Protocol Refinement (IPR) Framework (Yeong *et al.*, 2018; Castillo-Montoya, 2016) with inputs from a systematically synthesised semi-structured interview guide (Kallio *et al.*, 2016). These guidelines identify systematic steps for developing, refining, and testing the interview protocol. These identified steps include:

1. Identifying the prerequisites for using semi-structured interviews
2. Retrieving and using previous knowledge.
3. Ensuring that there is alignment between interview questions and research aim. This aspect of protocol development helps the researcher tailor the process towards generating relevant data that will help him satisfy the main objectives of the research. Seidman (2013:9) has observed that “an interest in

understanding the lived experiences of other people and the meaning they make of that experience” is at the root of in-depth interviewing”.

In summary, there are so many experiences that each respondent would have had. However, the researcher would be interested in getting the essential facts relevant to his research question, hence the need to enshrine this consideration when designing the instrument. For this research, the researcher ensured alignment between the interview questions and the research aim by creating a metric for mapping interview questions to align with the research aim and objectives. The metric helped to highlight relevant research aims and objectives. (Castillo-Montoya, 2016; Neumann, 2008).

4. Constructing an inquiry-based conversation: This consideration in the protocol development ensured that the researcher simplified the interview questions. It assisted in making the interview a ‘robust conversation’ and directing the inquiries to yield factual and valuable data. Questions were organised and presented in line with the social rules of ordinary conversations. Follow-up questions and probing questions gave room for more in-depth insight.
5. Receiving feedback on interview protocols: The supervisory team and the researcher's colleagues scrutinised the protocol. This scrutiny enabled the researcher to gather feedback from different critics, which helped to eradicate ambiguity and misconceptions from the interview protocol.
6. Piloting the interview protocol. The piloting process ensured that the respondents clearly understood the refined questions. It further ensured that the researcher could obtain the intended outcome from the proposed questions. Another stage of tool validation prior to data analysis further helped to enhance research quality.
7. Presenting the complete semi-structured interview guide.

The developed protocol tried to answer the following questions about the interview process:

- a) What should be said to say to interviewees when setting up the interview?

- b) What should be said to interviewees when beginning the interview, including ensuring informed consent and confidentiality of the interviewee (details contained in the participant information sheet for interviews attached as Appendix E)?
- c) What should be said to interviewees in concluding the interview?
- d) What should be done during the interview (Example: note-taking, Audiotaping or Both)?
- e) What should be done following the interview (Example: Fill in notes, check audiotape for clarity, transcribe, summarise essential information for each, submit written findings)?

The researcher followed the steps above to enhance the research's trustworthiness and transferability. The participants' information sheet, which contains relevant introductory information, was approved by the university's ethics unit before the interview. The interview guide provided a reference point to ensure consistency between interviews, which thus increases reliability. Appendix C presents a copy of the interview protocol and interview questions.

A general information pack was also developed and distributed to all respondents. It contained an introduction to the research and its objectives. It also explained the conditions necessary for participation in the research, the proposed time/duration, and a general explanation of the mode of participation. A consent form earlier approved by the ethical board was attached to the information pack as Appendix D.

4.5.6.6 Sampling Strategy: Identify Sample Method and Size

Generally, Sampling methods are classified as probability sampling methods and non-probability sampling methods. This categorisation covers both qualitative and quantitative research. Figure 4.4 gives an outlook of various approaches to sampling. The nature of the research, the research questions, and the resources available are the factors that influenced the sampling method adopted (Marshall, 1996). The sampling frame for this aspect of the research comprises Otuoke Community dwellers, members of the Federal University of Otuoke (FUO) community, and HIA, EIA and IIA practitioners in the region. Since it is practically impossible and unproductive to interview the entire population that makes up the sample frame, choosing an

appropriate sample method becomes vital. The research team approved a combination of a purposive and a snowball sampling approach for this research. Purposive sampling is widely used in qualitative research (Marshall, 1996; Platton, 2002). It can effectively identify and select information-rich participants for in-depth studies (Marshall, 1996; Platton, 2002; Palinkas et al., 2015). It is also regarded as an effective use of limited resources (Platton, 2002; Palinkas *et al.*, 2015). The researcher chose the purposive sampling technique to maximise resource utilisation by selecting individuals with high knowledge and experience of the phenomenon of interest (Crestwell and Plano-Clark, 2011). Other factors informed the choice of the purposive sampling approach. The first was the need for the researcher to identify participants who were readily available and willing to participate in the research (Spradley, 1979; Bernard, 2002). The second was to find participants with competent communication abilities to effectively express their views in an articulate format and enhance accurate interpretation and analysis.

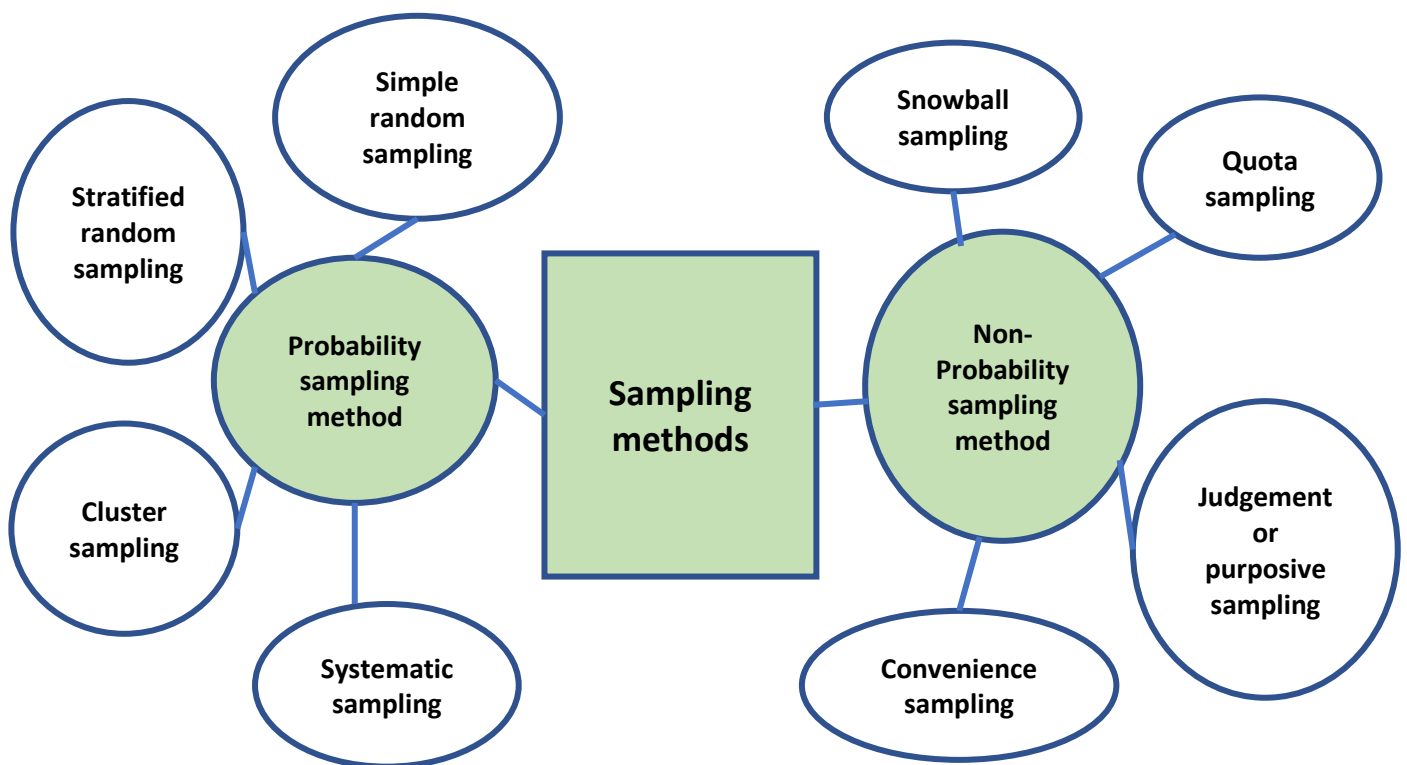


Figure 4.4: Sampling Methods for Research. Source: Rahi, 2017.

The choice of the sample frame resulted from the systematic evaluation conducted in the previous study (Study Three). The researcher identified and recruited two contact persons from the region to assist in recruiting the required interviewees. Both contact persons were lecturers within the Nigerian University system, with one lecturing at the University of Otueke (the host university for the chosen EIA). One contact person was responsible for recruiting members of the university community and community dwellers who were part of or had sufficient knowledge of the evaluated EIA. One contact person received remuneration for their services, and the other declined but offered to render voluntary service. The contact persons had adequate understanding and experience in qualitative research to enhance data quality. They were also required to have the ability to identify critical informants while serving as the intermediary between the researcher and research participants. Contact persons were also required to have good communication skills and a good understanding of the terrain and topography of the research area.

The homogeneity of network information within an organisation such as the university can only be assumed (van Liere *et al.*, 2008). In reality, it is complex and even more so because the required contacts extend to the community and other HIA/EIA practitioners. Consequently, snowball network sampling was an effective and practical approach complementing the initial purposive approach. Other researchers have explained and suggested the snowball sampling approach (Erickson, 1979; Heckathorn and Cameron, 2017; Simkus, 2022). The two recruited contact persons helped identify the first set of participants (ten), who later served as gatekeepers. Flick (2006) has suggested the use of gatekeepers in qualitative research. The requirements for qualification as participants followed the earlier approved guide. In general, the overall recruitment process followed the guide's guidelines initially approved by the ethical board of the university.

These first set of participants occupied an insider role and (alongside the contact persons) had the necessary contacts and technical know-how to support the research. The researcher ensured the recruitment process was flexible so the gatekeepers could freely recommend people of interest. Flexibility is supported as an element of qualitative research and recommended for qualitative researchers (Häkansson and Ford, 2002).

Collaboration with contact persons and first participants helped identify other interviewees. For the entire research, it was necessary to have two sample groups. The first is the HIA/EIA practitioners, while the second is the community dwellers in the Otuoke community, especially those involved in the Federal University of Otuoke EIA. The researcher identified fifteen participants from the community and ten practitioners for participation. However, sixteen interviews were successfully arranged, conducted, and recorded. Four contacts could not return calls, while one could not reach a time consensus for the interview. One identified participant withdrew before the commencement of the interview. The interview proceeded until saturation. Data saturation in this regard refers to a stage in which a “researcher begins to hear the same comments again and again” (Grady 1998:26). At such a stage, the researcher is recommended to stop data collection and start data analysis (Guest *et al.*, 2006; Francis *et al.*, 2010).

4.5.6.7 Study Population

The study area for this research is the Atuoque community in the Nigerian Niger Delta region. The research area selection aligns with the findings of study three. Documentary evaluation of completed EIAs within the Niger Delta Region informed the need for further research into the EIA process. Consequently, the study area for study four is the host community for the chosen EIA. The EIA was chosen based on thematic analysis evaluating approaches and best practices of all included EIAs in study three. It results in the choice of the EIA Atuoque.

Further evaluation into the level of implementation of mitigations and recommendations that emanated from the EIA is necessary to meet the research aim. The study population for the research included adults between 18 and 64 years of age who were residents within the study area and formed part of the sampling frame. This population subset is suited for the research as they are actively involved in community and career activities and form a more significant part of the working population, as defined by the Organisation of Economic Cooperation and Development (OECD, 2022). The need to get experienced and best-informed participants for the study informs the choice of this population subset. Section 4.5.6.15 (Demographics of Participants) presents detailed demographics, experience, and selection criteria for the interviewees.

4.5.6.8 Interview Preparation

With the successful identification of the interviewees, the researcher made specific arrangements in preparation for the interview. Certain items, such as a voice recording device, were purchased. The researcher also purchased a Samsung Galaxy J3 phone for recording. The research team evaluated the interview protocol to ensure that it is in line with the ethical guidelines of the university and can satisfactorily answer the research questions. Other items, such as a notebook for note-taking and other writing materials, were procured. The researcher arranged to secure a secluded and quiet environment for each interview and procured an electronic storage device (an external H-drive) to enhance the immediate transfer and secure data storage. A secure locker, with lock and key, was allocated to store all data storage equipment and all other devices used for data collection.

Potential participants received the information pact, and the consent forms a week before their scheduled interview so that they would have enough time to think and prepare for the interview. The consent forms expressly stated that their participation was entirely voluntary and that they could withdraw at any time before or during the interview. The participants had the option to use the contact person's phone should they have any limitation with access to phone or airtime (the researcher originated all calls, and as such, the airtime cost was on the researcher).

4.5.7.4 Trainings for the Interview

One crucial factor that the researcher considered when recruiting the contact persons was their experience in qualitative research. Both contact persons were senior lecturers in federal universities in Nigeria and were all PhD degree holders. Goodell *et al.* (2016:1) recommend participants' experience as a "desirable trait for those participating in data collection and analysis". Other researchers have also emphasised the need for experience when recruiting research assistants and participants (Miles and Huberman, 1984; Sofaer, 2002; Shenton, 2004). Although the researcher considered the experience of the research team and the contact persons desirable, the researcher also acknowledged that relying solely on experience can be misleading as it may not always produce consistency (Shenton, 2004; Goodell *et al.*, 2016).

Consequently, as Goodell *et al.* (2016:1) recommended, a modified training module was adopted to train the contact persons and other participants.

The first stage was ethical training. Given that the contact persons were staff of different institutions with different ethical standards for their research, the researcher needed to train all participants on MMU's ethical standards and expectations, which are the ethical standards that governed the research. Basic requirements, Dos and Don'ts were highlighted. Facilitators and participants needed to understand the ethical expectations of the ethical approval obtained at the commencement of the study.

The training process included a review of basic qualitative research methods and data collection procedures. All participants (the interviewer and the contact persons) agreed to undergo a refresher discussion on the basic principles of qualitative research. Emphasis was on the interview process, and all parties explored its basic tenets. It allowed the researcher to learn and develop his knowledge and skills in qualitative research. The discussion (via telephone conference) provided a forum for all parties to interact and exchange ideas and understand and agree on the fundamental ethos of research.

The second stage was mock interviews in the form of pretesting and piloting. These helped to improve the research protocol and to ensure that the researcher and other participants acquainted themselves with the practicalities of conducting research interviews. The stage was modified to include a panel discussion on the interview protocol. Emphasis was on consistency and objectivity. The researcher introduced the contact persons to the approved interview protocol and asked them to familiarise themselves with the document. Criticism from the training and review process provided inputs for the protocol's adjustment and enriched further discussion with the supervisory team.

In summary, the training process reviewed the research objectives, ethical standards, and data collection techniques. Capacity building and familiarisation exercises using the developed interview protocol were part of the training exercise.

The stages of pretesting and piloting preceded the formal training exercise and formed part of the overall training objective. The final research protocol included several

lessons that were learned and incorporated. The participants also had first-hand practical interviewing experience.

4.5.7.5 Researcher's Identity and Positionality

A researcher's identity can be described or represented in various dimensions or through the prism of various epistemological standpoints (Castelló *et al.*, 2021). It could be expressed in terms of his alignment to any given or different meta-theories and represented by the researcher's views on the dynamism, multiplicity, or individuality of one's identity (Atewologun *et al.*, 2017). Castelló *et al.* (2021:569) suggest that "meta-theories act as knowledge-claims guiding decisions regarding research questions, conceptual frameworks, and methodological decisions in empirical studies (Castelló *et al.*, 2021:569).

Sections 4.2 and 4.3 explain this researcher's identity in epistemological terms or concerning his relationship to various meta-theories. Concerning personal and social identity, the researcher believes in the socio-psychological perspective, which sees the human self as part of a complex system that is multiple, hierarchically organised, context-specific, and variable (Subašić *et al.*, 2008; Uluğ *et al.*, 2021). Depending on the context, some people may describe themselves in terms of personal or social identities. In any case, the researcher assumes that identity is a social construct, in which case the role of sociocultural, historical, environmental, and political context is relevant in forming identity. However, he acknowledges that there should be a balance between individual experience and social influence. In summary, the researcher aligns with the assumptions that identity could be dynamic, socially constructed, and multipliable. He agrees that critical thinking is more relevant than action, although he believes in balancing experience/practice and critical thinking/interpretation.

The researcher is the primary instrument in qualitative research, given that qualitative research is interpretative. The researcher's identity and background influence his/her inputs and how he/she interprets research data (Maxwell, 2005). His beliefs, biases, and assumptions should be disclosed and minimised (Altheide and Johnson, 1994).

With these perspectives, this researcher acknowledges that his position as a native of the Niger Delta region of Nigeria and his knowledge of the region could have

influenced his personal and social identity, which in turn might influence the research approach. He also believes that the personal or social identities of each research participant and contact person can influence their views and interpretation of their experiences. The researcher is also concerned about how his identities might influence the research approach, recruitment process, participants' responses, or data interpretation process.

To minimise any bias, the researcher ensured that he eliminated any act of implicit coercion during and after the recruitment process. He also ensured that he remained ethical and objective as much as possible, although he could not guarantee absolute objectivity due to the nature of the research. Member checks or respondent validation was carried out to enhance the trustworthiness of results. The researcher asked interview respondents to review the content of their transcribed responses to enhance accuracy. He also relied on inputs from faculty research advisors and supervisors throughout the evolution of the research.

4.5.6.11 Pretesting

Hurst *et al.* (2015:4) state that “pretesting involves simulating the formal data collection process on a small scale to identify practical problems about data collection instruments, sessions, and methodology”. Many other authors have recommended pretesting for its ability to improve the validity of qualitative data collection procedures and the researcher’s confidence (Foddy, 1998; Bowden *et al.*, 2002; Collins, 2003; Drennan, 2003; Brown *et al.*, 2008). Pretesting also improves research reliability and eases the process of data interpretation (Hurst *et al.*, 2015).

The researcher underwent a pretesting process by conducting four mock interviews with his colleague and the contact persons. The researcher tested the two sets of interview questions independently during the pretesting. The mock interview sessions tested the instrument's clarity, context, time consumption, and alignment with research objectives. The process ensured that the researcher highlighted questions that could be ambiguous or make the respondents uncomfortable and confused. The under-listed review criteria (as recommended by (Hurst *et al.* 2015: 4) were followed to assess the instrument in the pretesting stage:

- i. *Evaluating language competency and content validity of data collection materials.*
- ii. *Estimating the time length of full interview delivery and marking periods of respondent fatigue.*
- iii. *Maximising methodological skills and achieving proficiency standards for qualitative data collection.*
- iv. *Assessing the feasibility and fidelity of translation and transcription protocols in preparation of the interview text for qualitative analysis.*

At the end of each pretesting exercise, the respondents gave their official feedback. The respondent's feedback, observations, and comments were documented and used along with the researcher's notes to modify the final research protocol.

4.5.6.12 Piloting

Following the pretesting stage, piloting of the research instrument was necessary to further test the questions amongst the would-be participants or people of similar backgrounds and gain some practice skills in interviewing (Sampson, 2004; Majid *et al.*, 2017; Ismail *et al.*, 2018; Malmqvist *et al.*, 2019). In highlighting the usefulness of piloting in qualitative research, Sampson (2004:388) states that:

Immersion in the field without any pre-exposure can provide a researcher with a feast of fascinating information and observations and can result in not knowing 'where to start', prompting some researchers to advocate suspension of the start time for a short period.

The pilot stage for this research work allowed the researcher to test the instrument on potential respondents. Recall that there were two interview questions for two sets of respondents: community dwellers/members of the university community and HIA/EIA practitioners. Participants for the pilot stage came from both sets of respondents. Galloway (1997) suggested that 5 to 10% of the final respondents may be sufficient for the pilot exercise. Hill *et al.* (2005) recommend at least two pilot interviews for standard qualitative research of about 15 respondents. Although it was impossible to accurately predict the number of respondents needed to reach data saturation, the research instrument piloted two participants from each set of respondents.

Participants for the pilot stage were from among the potential respondents. The contact persons nominated the respondents for the pilot stage. The contact person for each set of respondents nominated the pilot participants to represent that set. This approach was helpful because the researcher tapped into the contact persons' experience and familiarity with the respondents. It ensured that the nominated respondents had attributes that genuinely reflected the qualities of respondents within each set.

The pilot exercise took the form of a typical interview. All parties agreed on a scheduled time, and the researcher shared the consent forms and information pack beforehand. During the pilot exercise, the researcher took notes and documented the process. The experience, inputs, and data generated from the pilot study helped modify the final research instrument and improve the overall research design.

A summary of the inputs from the pretesting and piloting process is listed below:

- i) Removal of repetitive questions: Identifying two questions that attracted the same responses from the respondents. Efforts to rephrase them showed that they were a repetition of each other. They were amended and merged to form one question.
- ii) Rearrangement of the questions to suit design goals.
- iii) Time adjustment: The time allocated for the interview was adjusted to reflect the realistic time limit between 45 and 60 minutes.
- iv) Improvements in the independence and confidentiality of respondents: Amongst the community dwellers, the contact person, in most cases, had to use his phone and initiate the call. Some respondents chose to stand near the contact person to respond to the interview. However, feedback from the pilot stage revealed that they are more independent when left alone to respond. So, even when they did not mind standing in proximity to the contact person, the protocol for the final interview was changed to include that they must be left alone unless there is a need for technical assistance.
- v) Eradication of bias and putting on the “researcher’s” hat. Identification and rephrasing of questions reflecting the researcher’s opinionated and subjective stance. Also, the experience from the pilot equipped the researcher with the skills to probe without imposing his opinion on the respondents.

Figure 4.5 summarises the stages leading up to and during the pilot stage.

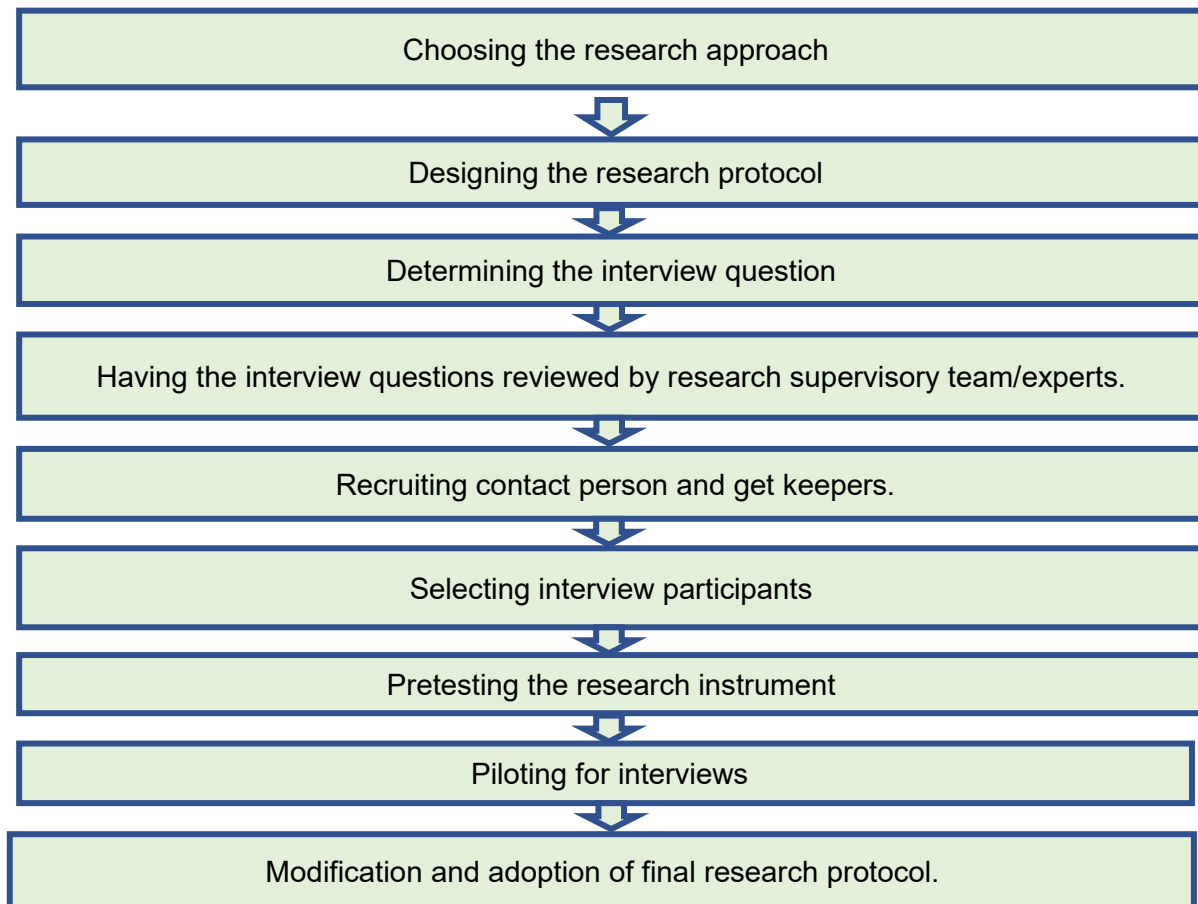


Figure 4.5: Research Development Stages

4.5.6.13 The Interview Questions

As stated earlier, the design of the interview protocol followed the guideline of the standardised Interview Protocol Refinement (IPR) Framework (Yeong *et al.*, 2018; Castillo-Montoya, 2016) with inputs from a systematically synthesised semi-structured interview guide (Kallio *et al.*, 2016). The synthesis of the interview questions came from a pool of questions systematically generated via a quasi-screening team that comprised the researcher and his supervisory team. The questions were open-ended to attract more in-depth responses and encourage openness and freedom (Bogdan and Biklen, 1982; Kvale, 1996; McNamara, 2009; Turner, 2010). For example, they were asked to describe their understanding instead of asking if the respondents knew about integrated impact assessment. The design of the questions ensured clarity, objectivity, and neutrality. Wordings (such as judgemental, evocative, or opinionated

words) that might influence the interviewee's opinion were avoided (McNamara, 2009; Turner, 2010; Merriam and Tisdell, 2015). The pretesting and piloting exercise further tested the clarity of words. Factual questions were also presented to the respondents before they gave their opinions. For instance, questions on the procedures of conducting IIA in the region came before questions on their opinion about the quality of practice.

The interview approach, as stated earlier, was semi-structured. The procedure had two sets of interview questions for two sets of respondents. The first set of respondents were the HIA/EIA practitioners. The interview questions started with, "Please, can you tell me how HIA, EIA and IIA are practised in Nigeria in your view?". The framing of the questions enhanced the interviewee's flexibility and freedom for a more in-depth exploration of the phenomenon (Strauss and Corbin, 1998). Possible areas for 'probes' were highlighted for emphasis and usage during the interview. Probing was necessary to encourage interviewees to give more clarification and in-depth elaboration of their views or root experiences (Rubin and Rubin, 1995; Seidman, 1991). See Appendix C for details of probing questions. Responses to probing questions are incorporated into the results. Subsequent questions followed similar patterns of clarity, objectivity, and focus. The second set of questions was for the community dwellers and university community members. Their interview questions started with, "Can you please describe your experiences participating in Impact assessment?". This question aimed to provoke robust and in-depth discussions while enhancing the participants' freedom and flexibility. Areas for potential probes were also highlighted for usage when administering the interviews. Such probes included occasional requests for deeper exploration using words such as why, how, etc. Appendix C contains the complete interview protocol and the interview questions.

4.5.6.14 The Interview Process

Data collection for this study took place between September 2020 and December 2020. As previously justified, the primary data generation method for this aspect of the research was qualitative interviews. Interviews have been widely used and recommended for qualitative studies of human experiences. Kyale (1996:105) suggests the appropriateness of qualitative interviews when investigating "people's

understanding” of their life experiences. Merriam (1998:72) recommends that interviews could help “to find out those things we cannot directly observe...feelings, thoughts, and intentions”. Interviews can also be appropriate when describing the chosen phenomenon and triangulating data from other sources (Lincoln and Guba, 1985; Rubin and Rubin, 1995). Before each interview, the researcher received the official response to the consent form stating the respondent’s acceptance to participate in the study. The researcher ensured that all parties conveniently agreed on the time for each interview session. The research insisted on mutual agreement of time so that all parties had a relaxed atmosphere, devoid of any avoidable pressure or distraction, during the interview process.

At the beginning of each interview process (Before introducing the interview questions), the researcher introduced himself as a PhD student at Manchester Metropolitan University and a member of the IAIA. He also introduced his role in the study. The formal introduction helped to develop trust and increase confidence in the researcher’s familiarity with the topic (Creswell, 1994). The researcher briefly introduced the study, assured the participants’ anonymity and confidentiality, reconfirmed their consent, informed participants of their right to withdraw at any stage, and iterated the importance and relevance of the interviewee’s participation. Participants further reaffirmed their consent for the audio recording of interview proceedings even though they had stated their consent in the returned consent forms. The audio recording was necessary to ensure accuracy and complete transcription (Rubin and Rubin, 1995; Merriam, 1998). The researcher informed the participants that data management and storage would follow MMU's ethical standards.

In order to ‘break the ice’ and build a relationship between the researcher and participants, the questioning process started with background questions. Early introduction of background questions can ease tension while also assisting in generating background information (Hill *et al.*, 1997). Respondents had the chance to introduce themselves and provide brief demographic information. The questions, designed following a systematically synthesised guide, were then presented to the respondents. The interviewer ensured that he remained neutral as much as possible by not showing strong emotions in his voice reactions to responses but encouraged responses by using words like “yeah”, “oh”, “ok”, “huh”, etc. He ensured that he

maintained an open mind throughout the interview sessions. The researcher made efforts to avoid displaying any form of disagreement with the interviewees when their viewpoints contradicted the researcher's ideas. During the interviews, the researcher ensured that he created and maintained a friendly, non-intimidating or threatening atmosphere. The interview process was accompanied by field note-taking. Field notes enabled the researcher to highlight critical points to be addressed later in the interview and document information that might form part of the data from field notes. One question was asked at a time (McNamara, 2009). The researcher explained terminologies and ensured that the language used was within the respondents' level of understanding. The researcher also used probes, when necessary, as the discussion progressed. He ensured that he checked the recording device to ensure that it was still working. The researcher provided smooth transitioning between major topics by using phrases such as "we have elaborately discussed (Topic A), I would like us to move on to (Topic B)".

In summary, the researcher administered semi-structured interviews to all 16 participants individually (one person at a time). He ensured that he maintained control of the interview process in each interview, especially if the respondent began to stray to irrelevant topics or took too long to answer a particular question (especially if time began to run out). He also ensured that he reclaimed control of the process if the respondents began to respond by asking questions in return (McNamara, 2009). Each interview session ended with a polite appreciation of the respondent's time and input and a brief assurance of the positive and ethical use of the resultant data. Documentation of all proceedings followed immediately, and audio recordings were downloaded and saved on a secure device.

4.5.6.15 Demographics of Participants

As stated in the methodology chapter, the research participants were IIA practitioners in the Niger Delta region and Otuoke community dwellers. The two contact persons recruited for the exercise are PhD degree holders and current lecturers in Nigerian Universities. Appendix B contains the participants' list and demographic characteristics. Contact person one is an environmentalist with over 16 years of practice. He is a university lecturer and holds a PhD degree in environmental parasitology. He lectures in and is a former head of the department in the faculty of

environmental sciences. He specialises in the HIA impact assessment component and is keenly interested in the research and its outcome. He assisted in recruiting the impact assessment practitioners.

Contact person two is a university lecturer with a PhD in sociology. He lectures at the Federal University, Otuoke, and helps recruit community members within the host community. He has over eight years of experience as a lecturer and academic researcher. His research interests are in Sociology and Anthropology.

The participants were in two categories (A and B) for identification purposes. Respondents in Category A are the impact assessment practitioners, while respondents in Category B are the community dwellers. The impact assessment practitioners comprised three academic professors, two associate professors, and three senior lecturers in Nigerian universities at the time of the research. They all serve as consultants and impact assessment practitioners to various impact assessment consulting firms. They also provide consulting services to the regulatory bodies and other private companies that handle or initiate projects (project proponents). The category also has three participants who are not lecturers but work with various impact assessment consulting firms.

For respondents in category A, their years of experience in impact assessment range between 12 and 27 years. They are all male and educated to a PhD level, except three respondents with MSc, BSc, and DVM degrees, respectively. Their focus areas in impact assessment covered all aspects of the impact assessment process. Three respondents from that category are HIA experts and contribute to building up the health component in impact assessments, while two are experts in the social impact's component. Others are involved in environmental impact assessment, such as environmental physiology/hydrogeology, microbiology and biotechnology, environmental safeguards, hydrology, and overall environmental management.

Category B participants are all members of the Otuoke community. They comprise three civil servants, one former local government head of personnel, and two university staff. One female participant was part of this category. One of the community participants is educated to a PhD degree level, while one has a Master of Science

degree. Two have a Bachelor of Science degree, and one has an OND, which is equivalent to a level 4 or 5 educational standard.

4.5.7 Field Notes

The data generation process, as stated above, was entirely through telephone interviews. The researcher could not travel to the study area due to the prevailing Covid-19 restrictions. However, the researcher could take field notes from his interactions with all participants, contact persons, and other relevant informants. The researcher documented these notes immediately after the interaction to avoid errors. These notes eventually served as additional data sources, which helped support and enrich the overall data. Areas covered in the field note include events recalled by all informants that were off-record and not part of the interview response but were relevant to the study. The researcher recorded his interpretations and speculation about emerging themes and reactions detected from respondents' perceptions. Other areas noted include the researcher's interpretation of the respondent's attitude, his tone, and areas of emphasis. The researcher also highlighted direct quotes that may be relevant during data analysis.

4.6 Data management and Analysis

Data management for this research encompasses all the steps taken to clean and prepare the data for analysis. The Analyses for Studies 1,2, and 3 are briefly explained in their methods and further explained as part of the results.

Studies three and four utilised the thematic analytical approach, explained in more detail below. Study 4 involved the administration of semi-structured interviews. The interview process ended upon reaching data saturation. All transcribed data from all the interviews were collated and merged into one data set for analysis. Below are the stages of preparing and managing the data for final analysis.

4.6.1 Data Preparation

Data preparation involved the identification of all assessment materials. The researcher labelled and identified all interviews and ensured all relevant documents for each process were labelled independently. These included the consent forms,

information sheets, and all other accompanying demographic information. Field notes for each interview process were also identified, transcribed, and linked. All relevant additional inputs and comments from respondents and contact persons were also identified and linked to their respective data sets. The researcher identified each respondent's interview with an ID number and labelled their interview documents to match with their transcribed data based on their respective ID numbers. Proper identification and documentation helped to ensure that each sample could be independently identified and linked to all its accompanying documents.

4.6.2 Data Processing:

Data processing activities start at a very early stage in the research cycle. As Morrison (2000) notes, data analysis in qualitative research begins in the field during observations and interviewing. Researchers regard the earlier stages of taking field notes and transcribing individual interviews as part of data processing. The subsequent processes undertaken at this stage of the data management process include data verification, re-evaluation of the transcription process, reading and re-reading of available data, data cleaning, data protection, uploading to software, and data documentation/safe storage. The researcher ensured that all errors and omissions were corrected as much as possible during data processing. The end-product of data processing is data with minimal errors. The processes covered during the data processing stage include verification, transcription, and re-evaluation, proofreading, data protection, and ethics. Others are data uploading to software, documentation, and safe storage.

Data verification involved the iterative process of checking relevant data to ensure that all documents were appropriately collated and linked correctly to their respective data set. The researcher transcribed and re-evaluated the transcribed data alone to avoid misinterpretation and encourage more profound familiarity with the data (Riessman, 2005; Braun and Clarke, 2006). Researchers have argued the importance of this phase in qualitative data analysis as a critical interpretative act where meanings are created (Lapadat and Lindsay, 1999; Bird, 2005; Braun and Clarke, 2006). As Braun and Clarke (2006:88) have noted, "there is no one way to conduct thematic analysis"; therefore, there is no one set of guidelines to follow when producing a transcript". The researcher applied a rigorous and systematic 'orthographic' transcription, which

entailed a 'verbatim' account of all verbal words (Braun and Clarke, 2006; Gray, 2018). The audio recordings for each interview were transcribed independently as soon as practically and conveniently possible after each interview session. Audible speech from the interviewees were transcribed and written in standard UK written English to aid readability and subsequent analysis. The researcher tried to avoid any loss of meaning and ensure that written text carry the same meaning as portrayed by the respondents.

Proofreading, re-reading, and correction or data cleaning followed the transcription process and were done before the final adoption and uploading of documents into the software. The researcher made efforts to eradicate all errors before final adoption. At this point, After the initial transcription, the researcher deleted some verbal interactions, such as repetitions, coughs, interruptions, false starts, overlaps, laughs and encouraging noises (such as 'mm'), that added no extra meaning to the text, to enhance the clarity of intended points. The researcher also included data protection procedures and ethics to ensure that respondents' anonymity and data sources were adequately maintained. Ethical protection included checking the data set to ensure that there were no linkages that would inadvertently expose the identity of respondents or any data source. To ensure ethical conformity, the researcher reassessed ethical compliance to eradicate errors.

After a successful data cleaning, the processed data were coded and uploaded to Nvivo (2020 version) for further thematic analysis. All other copies of relevant documents in connection with the research were stored in a secured space in conformity with the university's ethical standards.

4.6.3 Data Analysis

Qualitative data analysis aims to reduce non-numeric data and display and present conclusions that inductively or deductively emanate from the data (Miles and Huberman, 1994; Burnard *et al.*, 2008). It involves the rigorous and iterative processes of sorting, sifting through, reading and re-reading qualitative data to produce conclusions (Castellan, 2010). Patton (1990) identifies the three main types of qualitative data as data from interviews, observations, and written documents. As in

most research, the research design, question(s), objectives, and methodological inference from relevant literature influenced the chosen analytical style.

Data analysis for this study explores respondents' experiences and knowledge about the practice of IIA in the Nigerian Niger Delta region to understand the challenges within the IIA process and how to improve it. The fact that the interview process was a follow-up to the previous evaluation of completed IIA reports influenced the analytical approach. Theory emanating from reports evaluation influenced a priori identified insights; therefore, inductive and deductive approaches were used for the analysis. Combining both approaches enabled the researcher to focus on established themes that could satisfy the research questions while exploring new insights and trends emanating from the data. The descriptive phenomenological approach was used for the thematic analysis (Vaismoradi *et al.*, 2013; Ho *et al.*, 2017; Sundler *et al.*, 2019). The concept of descriptive phenomenology has been espoused in psychology research by Giorgi (2009) and Wertz (2005). Sundler *et al.* (2019) recommend its applicability to thematic analysis. Sundler *et al.*, (2019:736) stated that:

The process of thematic analysis, based in a descriptive phenomenological approach, goes from the original data to the identification of meanings, organizing these into patterns and writing the results of themes related to the study aim and the actual context (Sundler et al., 2019:736).

The constant comparison method (CCT) and other traditional analytical approaches, as presented by Glaser and Strauss (1967) and Strauss and Corbin (1990), were not adopted for this study since they require all emerging themes and categories to be grounded in the data without pre-determination (Hallberg, 2006).

The adopted analytical process involved the reiterative reading and deep understanding of meanings embedded in the lived experiences of respondents and the textual description of these meanings. The process required flexibility, and the researcher had to move back and forth between being close to and distant from the data. The literature review and the evaluation of IIA reports helped identify some trends regarding the constraints, mode of practice, and level of health coverage. These trends formed part of what could be termed 'pre-conceptualised trends. These preconceived trends did not influence the objectivity of the process but guided the

research towards answering the research question and identifying the primary themes for the thematic analysis. An internal quality evaluation mechanism helped to achieve this balance. This internal quality evaluation process involves constantly evaluating the sampling methodologies, instrument design, and interview data collection processes to ensure strict adherence. Emerging trends from the data were also inductively identified following various interactions within the data and a rigorous back-and-forth interaction between theory and data. Figure 4.6 presents a summary of the processes involved in data analysis.

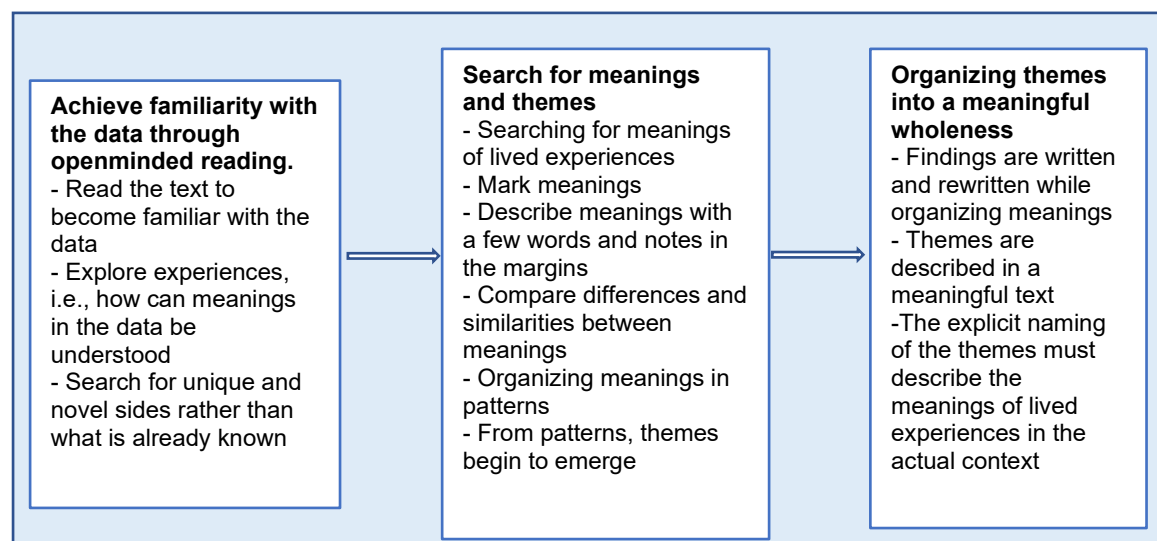


Figure 4.6: Summary of Analytical Process. Source: Adapted from Sundler et al., 2019

4.6.4 Thematic Analysis

Thematic analysis was adopted for this research because the researcher felt it would allow for more in-depth interpretative analysis and detailed interpretation of participants' meanings rather than just a representation of their responses (Braun and Clarke, 2006; Crowe *et al.*, 2015; Gray, 2018). The researcher chose thematic analysis because it strongly emphasises participants' views, experiences, and perceptions and allows for a deeper understanding of peoples' lived realities (Crowe *et al.*, 2015). The thematic analysis allows the researcher to effectively deploy the constructionist approach of exploring discussion to see how it shapes respondents' realities while also implementing the realist approach of reporting the realities of research respondents.

A theoretical or deductive thematic approach was primarily adopted to ensure that the analytical themes, which emerge from the researcher's theoretical stance, were

sufficient to satisfy the research aims and provide a detailed interpretation of the data. This standpoint aligns with the assertion of Gray (2018:692) that "a theme becomes important when it captures something important about the overall research question". Secondary 'latent' themes (Braun and Clarke, 2006) were also inductively identified to enhance detailed interpretive data analysis and theorising. The researcher modified and adopted the six-phase practical approach Braun and Clarke (2006) recommended to guide the thematic analysis process. Table 4.9 summarises the phases.

Table 4.9: Phases of thematic analysis (Source: Braun and Clarke, 2006)

| Phase | Description of the process |
|---|---|
| 1. Familiarizing yourself with your data | Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas. |
| 2. Generating initial codes | Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code |
| 3. Searching for themes | Collating codes into potential themes, gathering all data relevant to each potential theme. |
| 4. Reviewing themes | Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis. |
| 5. Defining and naming themes | Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme. |
| 6. Producing the report | The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis |

The first phase of the thematic process was covered earlier during data preparation and processing. The researcher adequately familiarised himself with the data and ensured that notes were kept during the process to guide him in the next phase of coding.

4.6.5 Coding

The research analysis used computer-assisted qualitative data analysis software (CAQDAS). The specific CAQDAS programme used was the Nvivo Scientific software (2020 version). Coding for the research started after the completion of the initial data management processes and followed the subsequent uploading of data into the Nvivo Scientific software. It involved the identification of meaningful and similar features or patterns within the entire data set that could subsequently be grouped under specific themes (Braun and Clarke, 2006; Maguire and Delahunt, 2017). It formed part of the

processes for data analysis and involved the coalition of meaningful information within the data set into sub-groups. The themes for this research were mainly theory driven. As such, the researcher approached the coding process intending to address specific deductively identified queries that aligned with the overall aims and objectives of the research. The Results chapter of this thesis gives a more detailed explanation and presentation of the identified codes. The researcher identified and coded only relevant features (not all content) within the data set. The systematic process required the researcher's full and equal attention to every detail of the entire data set. Although data processing involved computer-assisted qualitative data analysis software (CAQDAS), the computer software mainly helped arrange and present the research data; the researcher identified codes and placed them in their folders. The researcher also named different codes and identified patterns.

The process involved selecting, tagging, and naming the relevant text within the data set. The researcher coded inclusively to ensure that the context (for each selected text) was not lost (Braun and Clarke, 2006; Gray, 2018). Inclusive coding involves keeping part of the surrounding data within the selected text. Codes relevant to more than one theme were tagged to as many themes as they were relevant. Each interview transcript was uploaded as an independent document into the software and labelled with a specific ID number given to it during the data preparation process. The researcher systematically and iteratively coded all the documents before the theming process (Fereday and Muir-Cochrane, 2006; Gray, 2018).

4.6.6 Development of Themes

This phase in the thematic process started immediately after the coding exercise. The researcher deductively generated the primary or overarching themes to align with the research aims and objectives. The codes were then studied in detail to understand their inter-relationships and relevance to the main themes. Their relationships and interactions led to their placements under the earlier identified themes. The formation of sub-themes under the overarching themes also occurred to separate their diverse levels of interrelation. The researcher grouped codes that were more closely related and could collectively address an independent issue, naming them as sub-themes under the main themes. In addition to the overarching themes, the researcher identified codes that could not fall under any of the main themes (but could address

other issues) and grouped them under a miscellaneous theme. Parts of this miscellaneous theme helped to generate other inductively synthesised themes. All data relevant to each theme were collated and placed under their respective themes. The visual thematic map (within the software) assisted the researcher in seeing their interrelationships.

4.6.7 Rearrangement, Reviewing, and Naming of Themes

At this stage, the researcher gave a more detailed review of the themes and their codes by checking them individually for validity, relevance, and how they relate to their respective themes or sub-themes. The researcher further checked the main themes, sub-themes, and other inductively generated themes to see if they aligned with the data set and research aims. The process involved a critical and detailed evaluation of all the codes under each theme to ensure synergy and coherence. All codes that were unrelated or not part of a coherent pattern with their respective themes were identified, rearranged, or removed. The researcher scrutinised the themes for validity in addition to reviewing the codes. The iterative scrutinisation and validation led to certain adjustments and rearrangements. Ultimately, the exercise led the researcher to rearrange some codes, separate some sub-themes as stand-alone themes, and merge two themes into one.

Eventually, the reviewed themes and codes were named according to the story they tell, leading to the identification of each theme's overall outlook or goal. Following further refinement of the themes, the researcher identified the content and scope of each theme. At this stage, the researcher identified and defined the essence of each theme, the aspect of the data, and the research questions each covered.

4.6.8 Data Analysis and Report

The next chapter presents the overall results. The researcher ensured that the analysis and report reflect a coherent, concise, and exciting account of the story behind the data and the details across the themes. The overall data was thoroughly analysed, and the researcher drew correlations on how different themes fit into the overall story and how they relate to the research aim. Key elements of the research objectives were addressed based on available data.

4.7 Criteria for Ensuring Trustworthiness

Qualitative researchers' subjective stances have always attracted criticism (Lincoln and Guba, 1986; Gray, 2018). Critiques have always focused on the validity and reliability of qualitative research's outcome. Reliability in qualitative research refers to the replicability of research findings. In a constructivist research, Lincoln and Guba (1986) suggest that judgment on research quality should focus on credibility, transferability, dependability, and confirmability. They consider these terms analogous to internal and external validity, reliability, and objectivity, used in most positivist research designs. Most qualitative researchers have suggested similar alternative approaches to addressing reliability (Davis, 1992; Brink, 1993; Healy and Perry, 2000; Denscombe, 2002; Golafshani, 2003; Patton, 2014; Noble and Smith, 2015).

To achieve reliability of the study findings, the researcher focused on establishing trustworthiness by adopting the strategies of improving "truth-value, consistency, neutrality, and applicability" (Noble and Smith, 2015:34). These are theoretically consistent with Lincoln and Guba's (1986) suggestion of credibility, transferability, dependability, and confirmability. Table 4.10 shows the usage of these terminologies in positivist and constructivist research designs. The researcher thoroughly described the data collection, categorisation, and decision-making processes throughout the inquiry (Merriam, 1998). In practical terms, the researcher ensured that the research protocol's production process followed the university's ethical standards. He also ensured that he transparently followed the guidance of the supervisory team while training and recruiting research participants. Records of the step-by-step procedure were ethically kept throughout the lifespan of the research and documented for reference purposes. The researcher also acknowledged some inherent research limitations and tried to limit how much his personal or social identity might influence the research outcome.

Table 4.10: Terminologies Used in Evaluating Research outcome.

| Quantitative research approach | Qualitative research approach |
|---|--|
| Internal Validity Focuses on the precision of findings regarding data set and | credibility /Truth value Evaluates researchers' approach and procedures with reference to biases that may result in misleading outcomes. It measures the clarity and |

| | |
|---|---|
| tries to highlight methodological errors. | accurate presentation of participants' perspectives. |
| External Validity/Generalisability Focuses on the broader transferability or applicability of research outcomes in other settings or the real world. Applicability in other contexts | Applicability/transferability Considers the possibility of application of findings in other contexts, settings, or groups. Assesses the researcher's adherence to standardised protocol by their ability to present a detailed description of the processes. |
| Reliability Focuses on the consistency of the analytical procedures, including - accounting for personal and research method biases that may have influenced the findings. Relates to the replicability of research results. | Consistency/ dependability Focus is on the 'trustworthiness' by which the methods were undertaken and is dependent on the researcher maintaining a 'decision-trail'. It checks the clarity and transparency of the researchers' decisions and focuses on the level to which an independent researcher should be able to arrive at similar or comparable findings. |
| Objectivity Focuses on the level of neutrality and assumes that the researchers' beliefs, personality, and values should be entirely distanced from the findings. The research outcome should be entirely independent of the researchers' experiences and perspectives. | Neutrality/Confirmability Focuses on the overall attainment of all aspects of credibility, transferability, and dependability. It acknowledges the complexity of prolonged engagements with participants. It also admits the fact that methods and findings are intrinsically linked to the researchers' philosophical position, experiences, and perspectives. |

These steps ensured an audit trail, thereby increasing the transferability of the research outcome. This is otherwise known as generalizability or external validity. The researcher ensured that records were meticulously kept, and standard methodologies systematically applied, with a clear decision trail followed by consistent and

transparent interpretation of data. This further improves dependability/consistency or reliability in qualitative research. Data triangulation, which enhances credibility and generalisability, was achieved through different methods, data sources and perspectives. Some of the data sources include data from interviews with IIA practitioners, community duellers, and university community members. Data were also drawn from field notes and inputs from contact persons. The researcher also owns up to inherent methodological biases and tried to reduce these biases by improving and strictly complying with the research protocol to reduce subjectivity. The researcher acknowledged the existence of multiple realities, deliberately outlined personal viewpoints and experiences that could influence his judgements and tried to present respondents' perspectives accurately. The combined efforts and processes of improving credibility, dependability, and transferability ensured that the neutrality or confirmability of the research outcome was improved (Noble and Smith, 2015). In summary, the practical strategies adopted to enhance credibility, transferability, dependability, and confirmability followed the examples of Lincoln and Guba (1986). Table 4.11 presents detailed explanations of step-by-step actions taken by the researcher to enhance credibility, transferability, dependability, and confirmability.

Table 4.11: Actions Taken to enhance credibility, transferability, dependability, and confirmability.

| Rigour Criteria | Purpose | Research Action | Strategies applied to achieve rigour |
|------------------------|--|--|--|
| Credibility | To establish confidence that the results (from the perspective of the participants) are true, credible, and believable. | In dept and engagement with each respondent. | <ul style="list-style-type: none"> • Interviewer ensured that interview sessions were well planned out and respondents were relaxed and well informed of the interview process. Probing questions where effectively presented encourage dept. |
| | To evaluates researchers' approach and procedures with reference to biases that may result in misleading outcomes. It measures the clarity and accurate presentation of participants perspectives. | Interviewing process and techniques | <ul style="list-style-type: none"> • Interview protocol was designed under strict adherence to agreed guidelines and ethics. • Interview protocol was tested, pretested and corrections were imputed. • Pilot study was caried out to enhance effectiveness and smoothness of the final interview sessions. |

| | | | |
|-----------------------|--|--|--|
| | | Establishing investigators' authority | <ul style="list-style-type: none"> The researcher and research assistants and the contact person were all trained to have the required knowledge and research skills to perform their roles. <p>Research guidelines was produced and shared with all participants. The guideline was produced with guide from the supervisory team.</p> |
| | | Collection of referential adequacy materials | <ul style="list-style-type: none"> Good records of all field notes, audio recordings, and transcript were adequately and securely kept and eventually used for analysis. <p>All relevant data were stored following strict university guidelines.</p> |
| | | Peer debriefing | <ul style="list-style-type: none"> key members of the research team were regularly debriefed (mostly after each interview). |
| Dependability | <p>To ensure the findings are repeatable if the inquiry occurred within the same cohort of participants, coders, and context.</p> <p>Focused on 'trustworthiness' by which the methods were undertaken and dependent on the researcher maintaining a 'decision-trail'.</p> <p>It checks the clarity and transparency of the researchers' decisions and focuses on the level to which an independent researcher should be able to arrive at similar or comparable findings.</p> | Rich description of the study methods | <ul style="list-style-type: none"> A detailed outline of the research method and interview protocol was prepared. The study protocol detailed out the steps taken for each section of the research. All details included in the research methodology. |
| | | Establishing an audit trail | <ul style="list-style-type: none"> Detailed tract record of data collection process. <p>Details of interviewing process and the interview protocol.</p> |
| | | Stepwise replication of the data | <ul style="list-style-type: none"> Details of all analytical processes and methods of research analysis was documented. <p>The coding process and coding accuracy of the research team was enhanced.</p> |
| Confirmability | To extend the confidence that the results would be confirmed or | Reflexivity | <ul style="list-style-type: none"> The researcher ensured that accurate reflexivity is maintained through the research. This was achieved by including reflections as part |

| | | | |
|------------------------|---|--|--|
| | <p>corroborated by other researchers.</p> <p>Focused on the overall attainment of all aspects of credibility, transferability, and dependability.</p> <p>It acknowledges the complexity of prolonged engagements with participants. It also admits the fact that methods and findings are intrinsically linked to the researchers' philosophical position, experiences, and perspectives.</p> | | <p>of debriefings and during supervisory meetings and during meetings with research assistants and contacts persons.</p> <ul style="list-style-type: none"> • The research protocol included a topic on the "Role of Researcher's Identify" to enhance and further emphasise reflexivity. |
| | | Triangulation | <ul style="list-style-type: none"> • The researcher applied several triangulation techniques (methodological, data source, and theoretical). • Information from different respondents helped in the triangulation process. Saturation was reached before data collection ended. • Four different studies are included in this research and their data helps in the triangulation process. |
| Transferability | <p>To consider the extent and possibility of transferring or generalising the findings in other contexts, settings, or groups.</p> <p>Assesses the researcher's adherence to standardised protocol by their ability to present detailed description of the processes.</p> | Purposeful sampling to form a nominated sample | <ul style="list-style-type: none"> • The researcher used purposive sampling techniques. |
| | | Data saturation | <ul style="list-style-type: none"> • The researcher reached operational and theoretical data saturation before data collection ended. |

4.9 Ethical Considerations

Resnik (2010) defines ethics as 'norms for conduct' that distinguish between acceptable and unacceptable behaviour. Over time, many unethical events in research have led to dire consequences, causing the research community to re-

emphasise the need for strict ethical compliance in research (Trochim and Donnelly, (2001); Orb *et al.*, 2001; Trochim, 2006; Rensik, 2010;). The Tuskegee Syphilis Study involving the withholding of known effective treatment for syphilis from African Americans between 1932 and 1972 (Orb *et al.*, 2001) was a major ethical flaw that sparked outrage on research ethics. Orb *et al.* (2001) listed some potential ethical issues in qualitative research, including informed consent, confidentiality, data generation and analysis, researcher/ participant relationships, and outcomes reporting.

Ethical considerations in research allow the researchers to follow standardised guidelines. It effectively helps to manage the three major ethical concerns in qualitative research: the researcher's subjective interpretations of data, the researcher/participant relationship, and the design itself (Ramos, 1989). Adherence to ethics helps the researcher achieve the research's aim by ensuring truthfulness, avoiding error, and promoting values essential for collaborative work. Such values include trust, accountability, mutual respect, and fairness (Rensik, 2010). Ethical considerations promote accountability, which in turn helps build public support for research. It also promotes other important moral and social values, such as social responsibility, human rights, animal welfare, compliance with the law, and health and safety. However, noncompliance with ethics could result in significant harm to both human and animal subjects and the erosion of public trust.

National and International 'codes of conduct' for scientific research take into account the issues of voluntary consent, informed consent, privacy, anonymity, confidentiality, risk of harm to both the researcher and participants, beneficence and justice (Orb *et al.*, 2001; Miller and Brewer, 2003; Collins and Hussey, 2009; Babbie, 2007; Sarantakos, 2005).

In carrying out this research, ethical considerations were paramount. The university's Research Ethics and Governance Board gave ethical approval for the research before data collection commenced. All respondents gave informed consent before they were allowed to participate. The approved introductory and consent letter contained a formal consent form, which respondents filled out and returned before their engagement. The researcher gave all respondents the time to read, understand and consent. The researcher ensured that all interested parties understood the content

and roles they were required to play. The introductory and consent letters fully addressed issues of anonymity, confidentiality, voluntary participation, the ability to withdraw at any stage, and the implication of involvement. Risk assessment was part of the requirements for ethical approval. The researcher acknowledged the inherent nature of risk in every human endeavour and made steps to reduce this to the barest minimum. General Safety, security and fire safety awareness were given to contact persons and participants who might have to book a particular venue or travel as precautionary measures. The researcher did not identify any significant risks of harm that could emanate from respondents' participation. All research procedures followed the ethical standards of the Manchester Metropolitan University Research Ethics and Governance Board.

CHAPTER FIVE

Results of Studies 1,2 and 3

5.1 Introduction

As described in Chapter 4, this research was carried out in stages as Studies 1, 2, 3, and 4. The results of the first three studies are presented in this chapter in three broad headings, each presenting the results for each study. The results of each study are further divided into subcategories to provide better clarity. Chapter 7 summarises their overall interrelationship, while this chapter presents and briefly discusses the results of Studies 1, 2, and 3 under different subheads. The researcher used content analysis to analyse studies 1 and 2 and thematic analysis to analyse studies 3 and 4.

Detailed explanations of the processes of thematic analysis are presented in Chapter 6 as part of the explanation for Study 4.

5.2 Detailed Results of Study One

Study one required the development of a screening tool for HIA. The tool development process involved various iterative stages of design, testing, piloting, and evaluation before the final product was put forward for review by a panel of HIA experts. The initially proposed approach was to develop a stand-alone section to screen the potential health effects of abandoned projects. However, a unanimous agreement to incorporate other aspects of the screening tool later replaced the initial standpoint. This final approach helped to enhance the tool's robustness. The research team divided the tool into sections to enhance its clarity and user-friendliness. Each section depicts a stage in the screening process. The various stages include the project information and team formation stage, the impacts on determinants of health, the potential impacts in the event of project abandonment, and the decision and rationale stage.

The flow diagram in Figure 5.1 shows the flow pattern and stages of application of the proposed tool. Subsequent headings under Sections 5.2.1 to 5.2.4 explain decisions and actions needed at each stage. The final decision takes place after the decision-making process at stage 4.

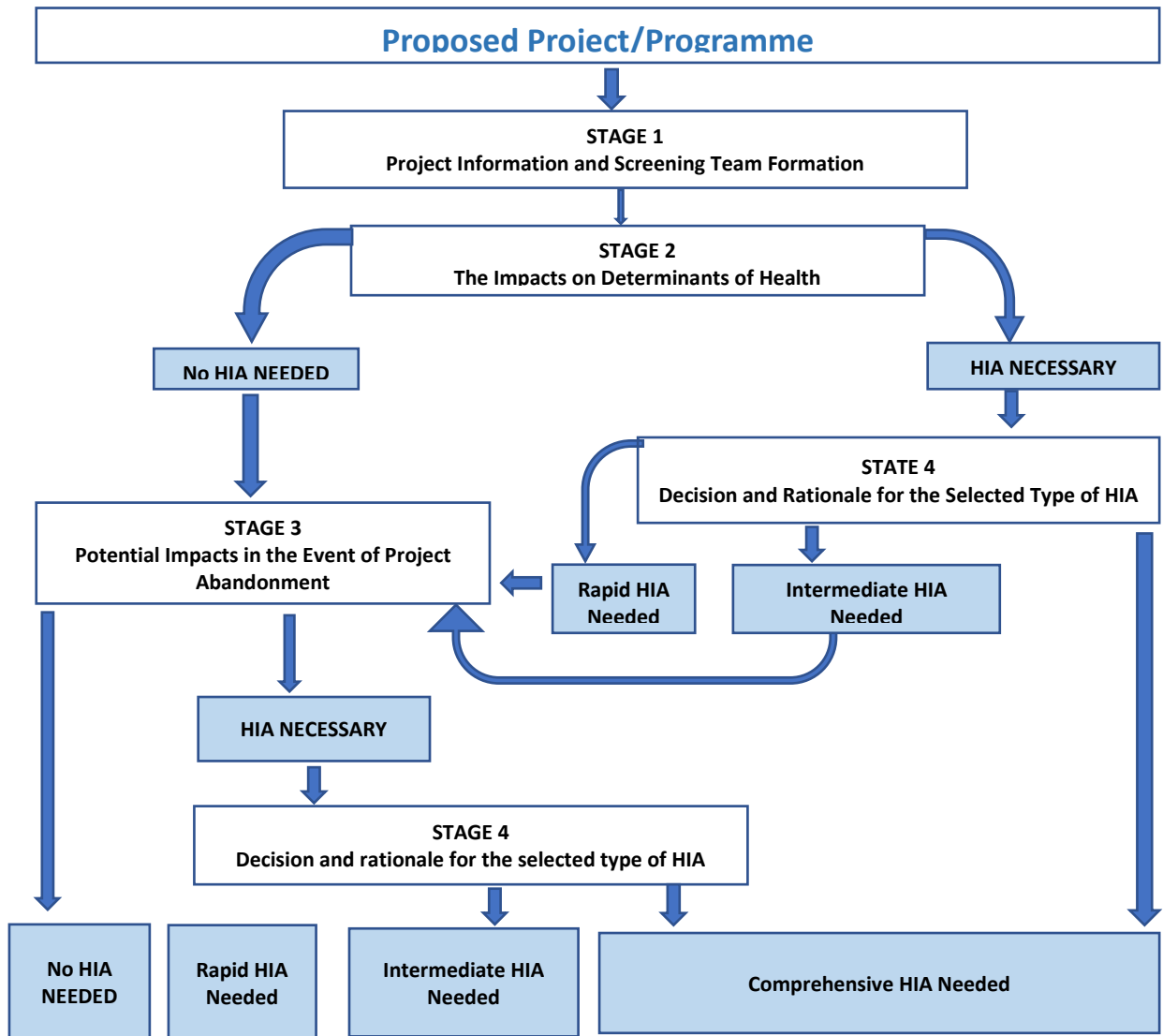


Figure 5.1: Flow Diagram for Stages of Application of Screening

5.2.1 Stage 1: Project Information and Team Formation

In study one, the study designed a proposed screening tool for practitioners. A detailed knowledge and understanding of the proposal would help understand potential impacts. This notion influenced the design of the introductory section. It obtained basic information on the type, location, and details of the facilitators of the proposed project. The section presented some open-ended questions to retrieve relevant information on the proposed project, focusing on the type, duration, location, and objectives. A closed and multiple-option question on the constitutionality, stage of development, funding and operational independence of the project closely followed the preceding questions. The author believed these preceding questions would serve as an alleyway towards a

more detailed understanding of the project's circumstances. Most existing screening tools have included attributes similar to those included in stage one (Grinnell, 2013; GLA, 2001). The researcher intentionally utilised multiple types of questions, designs, and approaches to arrive at exhaustive and coherent conclusions.

5.2.2 Stage 2: Impacts on Determinants of Health

The second stage focussed on the initial assessment of potential impacts on health determinants. The section covers potential impacts on the general determinants of health, distribution of potential impact amongst various population groups, and inequality. The various determinants of health covered are institutional (public health systems and healthcare), socio-cultural, religious, and traditional environment, biophysical environment, socio-economic environment, biological characteristics, lifestyle and behaviours, and other broader health determinants. Assessors or members of the screening team have a space to indicate their responses on whether the proposal has any potential impact on the determinants of health by inputting "Yes (Y)", "Do not Know (DK)", or "No (N)" in the response box. The tools also provided a column for users to describe the level and nature of potential impact. This column allows the user to clarify the intensity and scope of the impact further, which eventually guides or informs the recommended action.

Questions for potential impacts on the general health determinants were covered in questions 2a and 2b, while questions 2c and 2d covered the distribution of potential impacts. For a more detailed evaluation of both positive and negative impacts, the design separated the assessment of potential positive and negative impacts on health determinants, allowing separate assessment of impacts. Question 2e focussed on responses on the impacts on health equity and inequality, and the overall design utilised both open and closed-ended questions.

5.2.3 Stage 3: Potential Impacts of Project Abandonment

The first part of this section covered potential indirect impacts from socio-political, socio-cultural, and socio-religious infractions. It is essential to differentiate potential health impacts resulting from socio-political, socio-cultural, and socio-religious infractions from the impact of health inequality. In most developing nations, some well-

intentioned projects with overwhelming positive impacts and potential to bridge the equality gaps could trigger political violence due to interest in location and siting. Such conflicts can have attendant health consequences. In such circumstances, an assessment of the proposal would give overwhelming approval without consideration for HIA. However, a critical assessment of the political tension would reveal the need for more investigation into the potential health impacts of any resultant violence. There is a need to consider and highlight these impacts in existing HIA screening tools, especially in developing countries. The high rate of similar conflicts within similar regions in developing countries justifies the need for these considerations.

This research relied on findings from a review of peer-reviewed published works on the causes of conflicts in developing countries to identify triggers for these sorts of impacts. Section three contained questions on the possible existence of traits of the shortlisted causes of conflicts. Members of the screening team were required to respond by inputting 'Yes(Y)', 'Do not Know (DK)' or 'No(N)' as responses to the questions. A grading was required to enhance the evaluation of the degree of influence of such traits. A grading scale of 1 to 5 was adopted, with 1 being the lowest possible level, while 5 was the highest possible level. The design allowed comments on the assessor's possible concerns about each question, and the section expects the assessor to consider the number of 'DK' and 'Y' when deciding the possibility of conflicts resulting from the proposal implementation.

The second part of this stage covered the potential health impacts emanating from the discontinuation or abandonment of projects. As mentioned in the introduction, project abandonment has significant health consequences that are hard to envisage during a normal HIA process. However, project abandonments are typical in developing countries. This section identified common causes of project abandonment from published research and designed questions to identify those factors. The sections provided questions on the availability of those identified traits and required the assessors to decide based on the responses. The design of the questions followed the pattern used in the first part of this section. The guidance requires the user to total the number of 'DK' to determine the impact level. The guide provides that anything more than two 'DK' means a significant lack of knowledge and, as such, should be interpreted as a potential Y.

The stage ended with a decision box, which requires the individual assessor to decide, based on the preceding responses, whether or not to conduct an HIA. A positive recommendation would trigger the next stage, which is stage four.

5.2.4 Stage 4: Decision and Rationale for or Against HIA

This section covers the final decision-making process. At this stage, the screening team will decide on the type of HIA. Questions guiding the decision-making process will depend on the project's size, scope, and nature. These questions will guide the assessor on the needed resources, the scope and coverage of the anticipated impact, and the project's anticipated level of influence. Knowledge of these factors and references to relevant literature can help the assessor determine the most appropriate type of HIA to carry out. Table 5.1 shows a guide to the questions and scale of responses for this stage.

Table 5.1: Questions for Decision Making Process

| Questions | Response: {Scaled from 0 to 5, with 0 being a state of non-existence, 1 being the lowest state possible and 5 being the highest}. | Comments |
|---|---|----------|
| What evidence base is mainly needed for the proposed HIA (type and volume) | Qualitative Quantitative Mixture of both Scale: | |
| What is the coverage or scope of the proposed project | Scale: | |
| What is the coverage of scope of the potential negative impacts | Scale: | |
| What level of community involvement is needed or anticipated | Scale: | |
| What is the effort needed to conduct the assessment or what is the dept of assessment required to conduct the HIA | Scale: | |
| What is the anticipated level of influence that the results have on policy makers and policy (To what extend will the result influence policy) | Scale: | |
| What level of resources are available for the conduct of the assessment (This include financial resources and other material resources such as baseline information and health data)? | scale | |
| 4b: Question | Response | Comments |

| | | |
|--|--|--|
| Stage of development of the proposed project | <input type="checkbox"/> Planning <input type="checkbox"/> Consultation <input type="checkbox"/> Mobilization <input type="checkbox"/> Construction <input type="checkbox"/> Completion <input type="checkbox"/> Operational <input type="checkbox"/> Decommissioning <input type="checkbox"/> Others | |
| Other existing or foreseeable limitations. | | |

5.2.5 Tool Testing

The designed tool was subjected to a thorough testing procedure to ensure user-friendliness and enhance usability in diverse scenarios. The need for a rigorous testing exercise was in recognition that product testing is vital to product development. The testing procedure conforms with the required standards for tool development and design. The tool testing followed a two-stage testing procedure to ensure sufficient rigour in evaluating all possible weaknesses of the developed tool. A complementary external testing by selected HIA experts accompanied a preliminary internal testing by the authors. Both testing procedures were designed to be rigorous and thorough, with a keen interest in making the developed tool robust and flexible for use in diverse situations while maintaining objectivity.

The preliminary internal testing involved the reiteration of various stages of development and the revisions of various versions of the developed tool. Various case scenarios were considered and applied to the developed tool. The implications for such scenarios helped to fine-tune and standardise the tool. Further fine-tuning and corrections followed the supervisory team's reflective group meeting. The authors of this research work constituted a Delphi panel comprising two colleagues and two other HIA experts to fine-tune and adopt the final version of the developed tool.

The adopted version went through an external tool testing procedure, which involved disseminating the developed tool to designated HIA experts to test for the tool's flexibility, applicability, relevance, and user-friendliness. HIA practitioners selected to participate in the external testing process were from diverse sectors of public health and HIA practice. The diversity in the composition of practitioners encourages a multidisciplinary approach that enriches its content and enhances the tool's flexibility. The participants were from various sectors, including the academic, government,

private, and NGOs. The Manchester Metropolitan University Ethical Board granted Ethical approval to recruit participants for the external testing exercise. Informed consent from all participants was sought and obtained before the commencement of the process.

The external testing process involved three case studies, and the researcher shared information from these case studies with all participants. In addition to the attached information on case studies, the developed tool was disseminated via email to participants. The participants were required to use the three case studies to complete and assess the tool and provide adequate feedback on its content, usability, and flexibility. Anonymity between co-participants was maintained by blind-copying participants on all correspondents. Feedback from participants was analysed and utilised to improve the tool's consistency, flexibility, and user-friendliness. The feedback also helped facilitate content improvement where necessary, and participants' comments and critiques helped the researcher identify the strengths and limitations of the developed tool.

5.2.6 Tool Application and Piloting

The tool, which was designed contextually to be relevant in the Niger Delta region, was piloted and applied with the collaboration of expert IIA practitioners in the region. Three experts were contactable and willing to be part of the testing process. The researcher was initially supposed to be physically present in the field during tool testing. However, due to travel restrictions during the global COVID-19 pandemic, experienced contact persons were recruited and trained to work with expert health impact assessors to test the tool's applicability. In collaboration with the contact persons, the four experts applied the tool in screening one proposed project each to evaluate the tool's flexibility, applicability, relevance, and user-friendliness. The researcher closely monitored the tool testing process through Zoom meetings, video and phone calls, and chats. Presented below is the summary of feedback from the tool application exercise. Figure 5.2 presents the outcome of the overall tool assessment exercise.

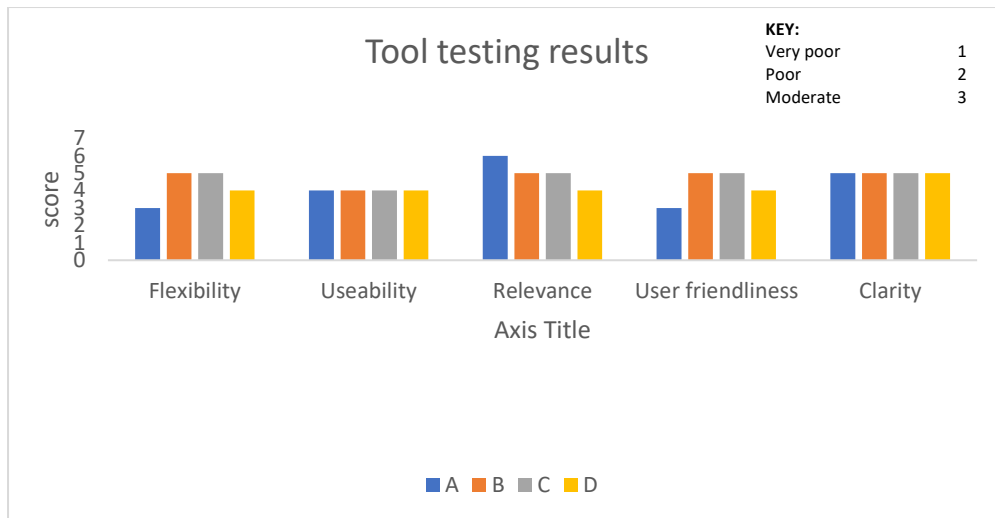


Figure 5.2: Tool Assessment Results

5.3 Detailed Results of Study Two

The length of the reviewed documents ranges from 4 (Quigley et al., 2006) to 369 pages (Birley, 2011). From the total number of 59 HIA documents included in the final review, four regions: Europe (35), Asia (1), North America (16) and the Australasia region (7) were the originators of these documents. Figure 5.3. shows a graphical representation of the geographical spread for the origin of the reviewed documents.

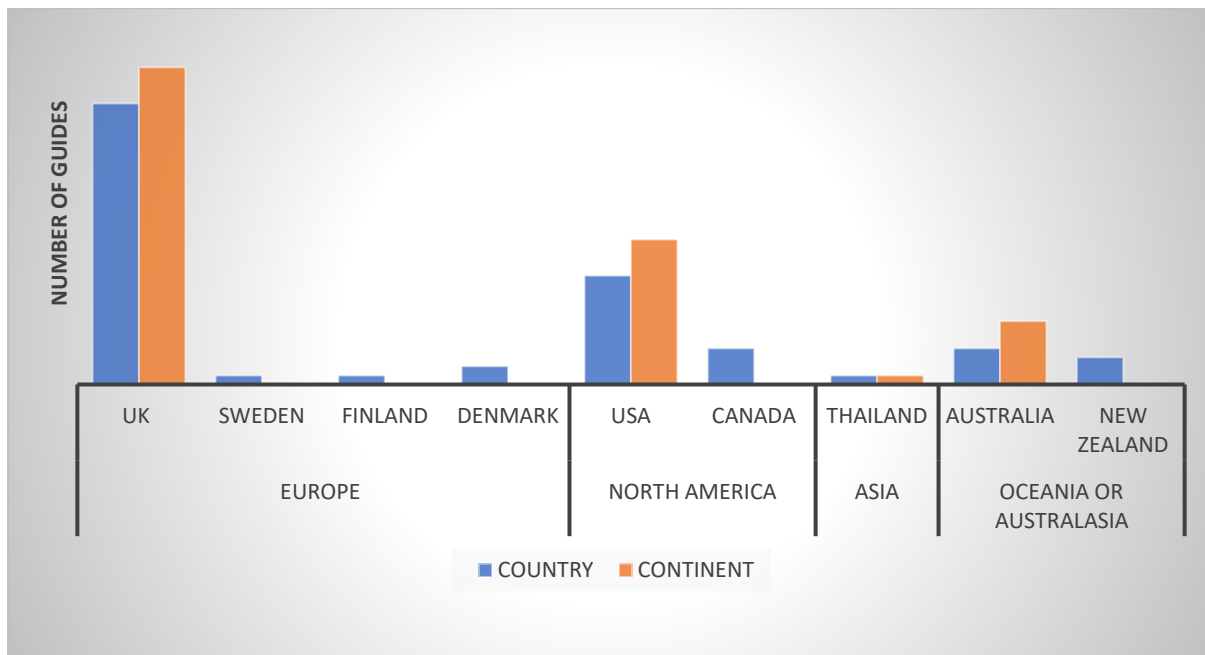


Figure 5.3: Country of Origin for HIA Guides

From the documents considered, forty-five (76%) were commissioned by national or local governments, although only twenty-five (42%) of the said documents were directly published by them. This result shows the high level of government ownership in HIA research. Other publishing organisations include Public and Private Health Organisations {seven (12%)}, Working Groups, Boards and Committees {nine (15%)}, Academic Research Institutes {nine (15%)}, and International Organisations {eight (14%)}. Other documents not published by governments had the collaboration of Government agencies or Affiliates. One of the documents was in the form of a published book with a detailed guide on the conduct of HIA. The phrase "Guide" was the most common key term used for qualifying the title of the reviewed documents, as shown in Figure 5.4. It accounts for 24(41%) of the documents considered herein. Guide was seconded by 'Guidelines' or 'Guidance', which had seven (12%) documents, and 'Toolkit' or 'Tool', which also accounts for seven (12%) documents. Other key terms are as shown in Fig 5.4.

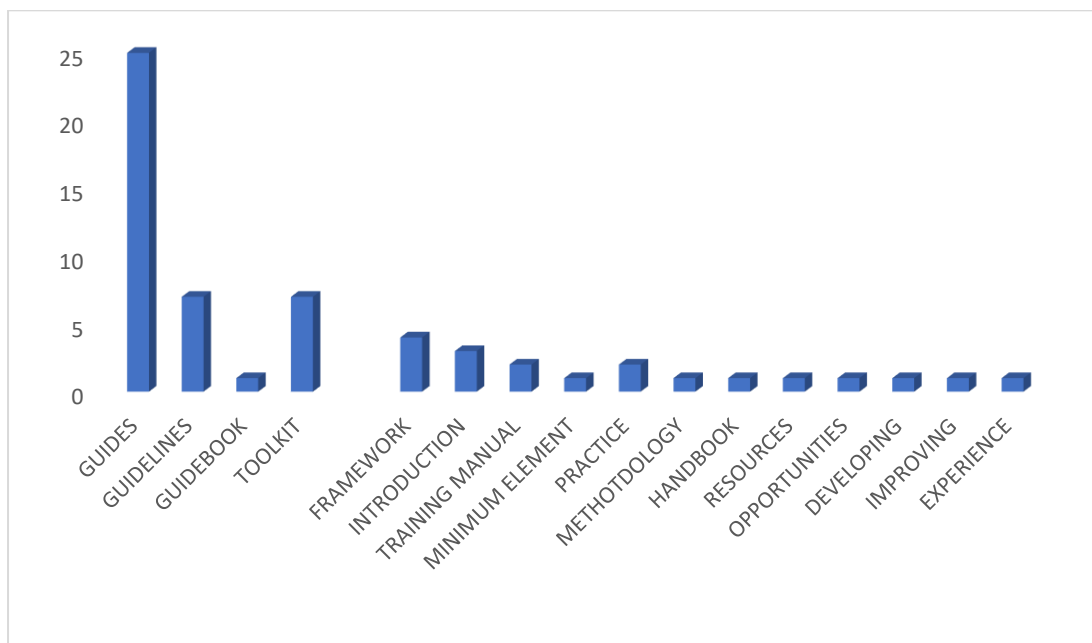


Figure 5.4: Key Terms Used in the Titles

5.3.1 Definition and Composition

Among the documents reviewed, fifty-seven (96%) of them have a distinct introduction and background about health impact assessment. Thirty-three (64%) documents

defined HIA according to the Gothenburg consensus paper (WHO Regional Office for Europe, 1999). Out of the twenty-one (35%) documents that did not directly quote the Gothenburg consensus definition, eight (38%) considered HIA with different definitions. However, the different definitions still integrate the significant components of HIA, as expressed in the Gothenburg consensus definition. Ten (4%) explained the significant concepts of HIA without a precise definition, while three mainly focused on integrating HIA with other kinds of impact assessment (Swedish National Institute of Public Health, 2005; Health Canada, 2004). Appendix A presents a list of varied definitions used in the reviewed documents.

The majority of the reviewed documents considered the varying nature of health determinants as an underpinning factor that gives credence to the need for HIA. Forty-nine (83%) documents included some explanation of the determinants of health in the form of a diagram (mostly from Dahlgren and Whitehead, 1993), tables, or texts. Each clearly explained the socio-environmental model of health and its determinants and agreed on accepting the socio-environmental model of health as the underpinning ideology for HIA.

Amongst the different types of HIAs, the prospective approach was overwhelmingly recommended for priority consideration when considering carrying out HIA (prospective, concurrent, and retrospective). Forty documents (68%) specifically described and recommended the prospective approach, while seventeen (29%) documents did not mainly deal with approaches about timing. Two documents (3%) described both prospective and retrospective but did not particularly recommend any over the other. Concerning the complexity of HIA, varied levels - comprehensive, intermediate, and rapid - were advocated, but the research documents still needed to produce a consensus on nomenclature. Terms such as minor, desktop, mini, policy audit, desk-based, limited, basic, or checklist were used interchangeably instead of rapid, while in-depth, major, maxi, health appraisal, and detailed were used interchangeably with comprehensive. The intermediate level was named interchangeably with rapid, limited in country, standard, advanced, or normal. Thirty-two (66%) documents referred to the three levels of classification, whereas three (5%) of the documents only referred to two levels of classification, while four documents focused on rapid appraisals that provided a more detailed description of the

processes/procedures undertaken in the impact assessment than would be expected of a rapid appraisal.

The type of impact-generating activity that documents were interested in is referred to (in this research) as the area of focus. The focus areas for the documents reviewed were mainly projects, policies, and programmes. Some documents introduced the term 'plans' as an addition to the three focus areas, while some replaced the three focus areas with the term 'proposal' (Douglas et al., Undated; WHO Regional Office for Europe, 2005). Two (3%) documents (Harris, 2002; IFC, 2009) focused on projects, while three (5%) documents (Abrahams et al., 2004; PHAC, 2005; MHNZ, 2007) focused on Policies. The remaining fifty-four (91%) documents focused on a combination of policies, plans, projects, and programmes, with twenty-three (38%) including the term 'plans'. Four of the documents were focused primarily on specific sectors: housing, oil and gas, greenspace, transportation, and land use planning (Greenspace Scotland, 2008; Metro Vancouver and EcoPlan, 2015; IPIECA and OGP, 2005).

5.3.2 Values, Community Involvement and Equity

From the documents considered, thirty-four (57%) presented lists of values and principles as the underlying principles governing the practice of HIA, and four guides explained the values to include openness, transparency, impartiality, and an explicit consideration of sustainability and equity. For the documents that presented clear lists of values, 82% included the traditional values of democracy, equity, sustainable development, ethical use of evidence, and a comprehensive approach to health. Others (Abrahams et al., 2004) included other values or used words or phrases with similar implied meanings such as scientific and robust practice, multi-sectoral and inter-sectoral approach, practicable, public involvement, reducing health inequalities, objective and transparent.

Community and stakeholder involvement and the constitution of the steering group, as evidenced in the document, was another characteristic of interest. In this regard, the researcher identified fifty (84%) documents to have recommended the involvement of communities by way of community representatives or community groups at various stages in HIA. City Solutions Centre (2011) emphasised the need for community

involvement at the assessment stage. All the documents reviewed recommended the implementation of the assessment stage after the scoping stage. Recommendations for the constitution of a steering group were included in forty-eight (81%) of the documents considered. Human Impact Partners (2011), in their submission, recommended the constitution of the steering group with well-defined terms of reference, while the City of Stoke on Trent (2012) recommended the constitution of the stakeholders and consultees group. Fifty (84%) documents highlighted the need for equity considerations in the assessment of impacts, and three (Dreaves et al., 2015; Mahoney et al., 2004; Ministry of Health New Zealand, 2007) laid more emphasis and stressed the need for equitable distribution of impacts across impacted population groups.

Baseline data through community and health profiling was recommended by 49 (83%) referred documents. Baseline data was required to establish the level of vulnerability amongst various population groups and to provide background data that will serve as a reference point throughout the impact assessment process.

5.3.3 Integration with other Impact Assessments and Attachment of Case Studies

The results strongly emphasised integrating HIA with other impact assessments, especially the Environment Impact Assessment (EIA). Thirty-nine (66%) documents were found to have done so and advocated for applying more persuasive measures to enhance the application of HIA through Health Policies. About 38 (64%) documents presented one or more case studies that served as examples; some provided attachments or links to other completed reports. Including case studies helped strengthen the need for HIA in other impact assessment tasks. Varied degrees of supporting resources, such as generic checklists, scoping questions, terms of reference, sample recommendations, assessment Matrix, Monitoring Framework, etc., were evidenced in 92% of the documents, and 31 (53%) attached samples or links of prepared resources.

5.3.4. Procedures and Methods of HIA

There was a consensus among the various documents reviewed on the stages and procedures involved in HIA practice. Although the nomenclature for the last few stages may vary, the idea and ideology remain the same. The first three stages of screening, scoping and appraisal or assessment are consistent in fifty-five (93%) of the documents reviewed.

The screening stage was included in all the reviewed documents except for three, which named the screening process differently (Antigonish Town and County Community Health Board, 2002; Health Canada, 2004; Kauppinen and Nelimarkka, 2004). The consensus was that screening ascertains whether or not to conduct an HIA given the level of impact, resource availability and possibility of the HIA to influence the decision-making process. Of this, forty-eight (81%) documents recommended using a checklist for the process and forty-two (71%) documents attached or referred the reader to a generic checklist as a guide. Thirty (50%) documents recommended the involvement of a few stakeholders at the screening stage.

The scoping stage was described as the planning stage for the HIA and the decision-making stage, where the terms of reference, roles and responsibilities and agreed plans for the assessment are established (Chadderton et al., 2012). Fifty-three (90%) of the documents linked the scoping step with the generation of terms of reference (Kemmer, 2007; Abrahams et al., 2004; Chadderton et al., 2012). Like screening, all the reviewed documents reflected the scoping step except for three, which named scoping differently (Antigonish Town and County Community Health Board, 2002; Health Canada, 2004; Kauppinen and Nelimarkka, 2004). Most of the reviewed documents described the main task of this step as drafting the assessment plan or project plan. The scoping stage also determines the depth and type of appraisal tool to be used.

Generally, all documents included the appraisal stage in their submission; however, most of the documents named this stage differently. The common names used include full-scale HIA, appraisal, assessment, risk analysis and assessment, assessment, and analysis, carrying out the health impact assessment, conducting the assessment, risk assessment, analysis, appraisal or assessment, profiling, and establish evidence-based base (Egbutah and Churchill, 2002). Dreaves et al. (2015) gave a breakdown

of the appraisal steps to include policy analysis, community health profile, data collection, impact analysis, and establishing priority impacts.

Most documents recommended qualitative and quantitative data generation approaches to assist in developing a conceptual model for impact analysis. Abrahams et al. (2004) elaborated on impact analysis and gave some guides on impact quantification and prioritisation. All the documents recommended a multi-method approach to impact analysis, which involves stakeholder inputs, baseline data, professional and expert inputs, community consultations, and other published and documented evidence.

5.4 Detailed Results of Study Three

Study three involved the evaluation of completed IIA/EIA reports from the Niger Delta Region. The methodology section presents the selection approach, and Appendix J presents a complete list and breakdown of included reports.

5.4.1 Compliance with HIA Values

The basis for the analysis of the included documents was their compliance with the values of HIA. The values, which are the overarching drive for HIA, include the comprehensive approach to health, equity, democracy, sustainable development, and ethical use of evidence. Results show different levels of compliance with values.

5.4.1.1 Comprehensive Approach to Health

A comprehensive approach to health is one of the underpinning principles of HIA practice. It is also a very vital principle in EIA practice. A wide range of societal factors, which could be termed the broader determinants of health, determine the complete state of physical, mental, and social well-being. Understanding their interrelationships requires the inter-sectoral collaboration of various sectors. Understanding the role or broader health determinants forms the basis of any assessment of health impact within EIA and should be done coherently and comprehensively. A holistic and comprehensive consideration of all relevant health determinants is a comprehensive approach to health recommended by most practitioners.

All reviewed documents provided information on the proposed projects' environmental, socio-economic, and health effects. These efforts to provide information on health-related effects were itemised in their objectives, as in the case of the EIA report on the proposed Dangote refinery or were covered in the health section of the reports as in the case of the EIA report of Otumara Associated Gas Project. Other reports include the impacts on health infrastructures and institutional factors. For instance, the EIA report of Assa North- Ohija South Gas development project identified the cumulative impact of the project on healthcare infrastructure/services and the impact on the health workforce. All the reports utilised public participation/stakeholders' consultation to gather background and impact

appraisal data for holistic information gathering. They recommend using a multidisciplinary approach or a combination of research methods to gather and analyse data. As a result, they evaluate (within the context of each report) relevant environmental, social and health impacts.

Although potential impacts directly or indirectly influence the determinants of health within the project areas, impact assessments were not explicitly targeted at the health consequences of impacts or linked to the influences they will have on human health or health outcomes. Most reports emphasised addressing the effects on the biophysical environment and compensating community participants to avoid conflict. Most reports also showed the need for more consistency in the approach to health determinants, and most of the identified environmental and social impacts were not linked to their corresponding health determinant.

5.4.1.2 Equity

As a principle of HIA, equity is concerned with the distribution of health impacts across various population groups. It advocates that practitioners should consider unfair impacts on vulnerable populations (especially when they are avoidable) and put appropriate mitigating measures in place to reduce adverse health outcomes. Simply put, consideration should be given to the distribution pattern of the identified impacts to understand their effects on vulnerable populations.

Most of the reviewed reports stated some basic indicators for equity considerations amongst the various population groups within the host communities. For instance, the EIA report for Dodo North non-associated gas wells development project noted the extent of discrimination against women and the lack of programmes specifically designed to assist the physically challenged members of the population. Also, the EIA report of the Second Phase of the Rural Access and Mobility Project noted the clear gender difference in access to resources and entitlements. It also highlighted the gendered nature of transportation in the project area. It identified the differential impacts of failing infrastructure between different gender groups as well as the role of women community contractors and the barriers they face in responding to the implementation of a gender-equitable community road maintenance program. The EIA report of the Soku Gas Plant to San Barth Manifold Pipelines projects also noted high

inequality in income distribution amongst the host community. However, there needed to be more coverage or consideration for the distribution of the identified impacts amongst the various population groups. Most reports included age or gender distribution within the respective host communities. However, some included the disparity in educational status and the socio-economic status in the host communities. Although different vulnerable population groups (women, children, physically challenged, etc.) were identified in most baseline data, the impact distribution patterns fail to identify how these impacts affect different population groups. In addition, mitigation measures were not specific in this regard.

5.4.1.3 Democracy

All the reviewed reports showed apparent adherence to basic democratic principles, some of which include the involvement of all stakeholders, including members of the host communities. All the reports reviewed carried out Public Participation/Stakeholder Consultations in line with the EIA Act (FRN, 1992). Such adherence could be attributed to the fact that it is a legal requirement and forms part of the threshold required for regulatory approval.

The EIA report of the Azura-Edo Independent Power Project indicated that the detailed stakeholder consultation process assisted in ensuring that all stakeholders have had the opportunity to provide input into the project planning process. It further stated that "this has also assisted in laying a sound foundation for building relationships with stakeholders for the ongoing engagement that will continue throughout the lifecycle of the Project" (Opitz et al., 2012: A-10).

The EIA report of the Saghara Associated Gas Solution (AGS) project indicated that stakeholder engagement/consultation is a significant requirement in all SPDC (Shell Petroleum Development Company) projects designed to interact at various levels of project activities with communities and secure cooperation and support to achieve harmony in carrying out projects. It further stated that consultation is generally seen as the whole process of seeking information from relevant stakeholders, including communities, academia, NGOs (Non-Governmental organisations), government, and industry on the environmental and socio-economic implications of all facets of the project.

The EIA report of the Agura Independent Power Project identified the objective of the consultation process as an avenue to present the proposed project and EIA process to stakeholders, interested and affected parties, and the relevant authorities. It, however, included various stages of consultation, which involved a preliminary consultation of the community representatives and other stakeholders for inputs and data generation.

Every other report engaged in a form of consultation and stakeholder participation. The involvement of interdisciplinary and intersectoral approaches was notable, although it needed to be reflected in the level of involvement of personnel with HIA backgrounds.

5.4.1.4 Sustainable Development

Most reports considered the sustainability of the proposed developments. Most reports addressed sustainability in environmental, social, economic, and technical terms. The EIA of the Proposed EA/EJA Field Further Oil Development Project acknowledged sustainability to include the above areas. It states that the consideration for sustainability is aimed at ensuring that the current use of the environment and its natural resources does not damage prospects for use by future generations. It further stated that the design and equipment used must be technically sustainable and socio-economically beneficial to the human population to achieve this. Most of the reports seem to focus on sustainability in terms of enabling the continuous operation of the proposed project rather than sustainable development, which encompasses the development and execution of the proposed project in ways that meet the needs of the present without compromising the ability of future generations to meet their own needs. Although health sustainability involves considering the environmental, social, and economic factors in healthcare delivery (which means that positive environmental, social, technical, and economic sustainability would benefit health), the focus was not particularly on health sustainability.

5.4.1.5 Ethical Use of Evidence

The reviewed reports utilised various methodologies and techniques in generating background data and assessing potential impacts. Methodologies used are similar to

those applicable in HIA and are scientifically ethical, in the reviewer's opinion. The EIA of the Assa North - Ohaji South Gas Development Project states that "a combination of methodologies was used for the impact assessment including field data collection, laboratory analysis, literature review, focused group discussions, interviews and administration of questionnaires, remote sensing and geographical information systems, trend analysis, professional judgment, modelling and matrices". Other EIA reports adopted similar methodologies in generating baseline data and during impact assessment. The reports utilised methodologies in line with the requirements of Nigerian environmental impact assessment guidelines (FMoE, 2022).

5.4.2 Methodological Compliance with Methods and Approaches of HIA

The decision on whether an EIA should or should not be conducted on a particular project precedes the actual process of carrying out an EIA. This is because EIA is a legal requirement, so the state uses its grading system to decide whether each project meets the threshold for EIA to be conducted. The majority of the reports reviewed did not include a screening stage in their procedures. Some reports briefly itemised the screening process and, in most cases, described it in a different context.

The EIA report of the Rural Access and Mobility Project (Ramp), Enugu, combined both the screening and scoping stages and considered it to involve (i) visual inspection of roads and initial consultations and (ii) identification of safeguard issues for each road. The EIA report of Agbada Non-Associated Gas (NAG) Project describes the screening and scoping of potential impacts as a necessary step to be undertaken in order to determine the scope of issues to be addressed and to identify the significant issues relating to a proposed action. It further states that "it is important that the effective screening of actions take place in all environmental assessment systems without which unnecessarily large numbers of actions would be assessed, and some actions with significant adverse impacts may be overlooked". This is slightly at variance with the motive of conducting a screening exercise in HIA to determine whether the HIA should be conducted or not.

As stated during the screening section, some reports combined screening and scoping as one step and described it as a step for determining the scope of issues to be

addressed. However, most of the reports independently included 'scoping' and described it as a step that defines the extent of the EIA, sets out the process and methodology to be used, and identifies the potential impacts to be included in the EIA. Most of the reports identified the objectives of the scoping phase as being to:

- (i) Provide an overview description of the project.
- (ii) Describe the existing environmental and socio-economic baseline using secondary data (obtained from previous EIAs and other studies) and primary data collection.
- (iii) Undertake a preliminary assessment of the potential environmental and social impacts associated with the project.
- (iv) Identify data gaps.
- (v) Obtain early input from key stakeholders in the identification of potential impacts and mitigation measures; and
- (vi) Develop a proposed Terms of Reference (TOR) for the EIA study and define an appropriate program for stakeholder engagement.

All the reports reviewed considered scoping as a step to determine the terms and boundaries (spatial and temporal) of the environmental impact assessment. The approaches/techniques used are similar to what is obtainable in HIA. Components of these approaches include forming a steering group and consultation with relevant stakeholders. Most reports need to give more information on the estimated time needed to prepare the EIA Report and its possible length.

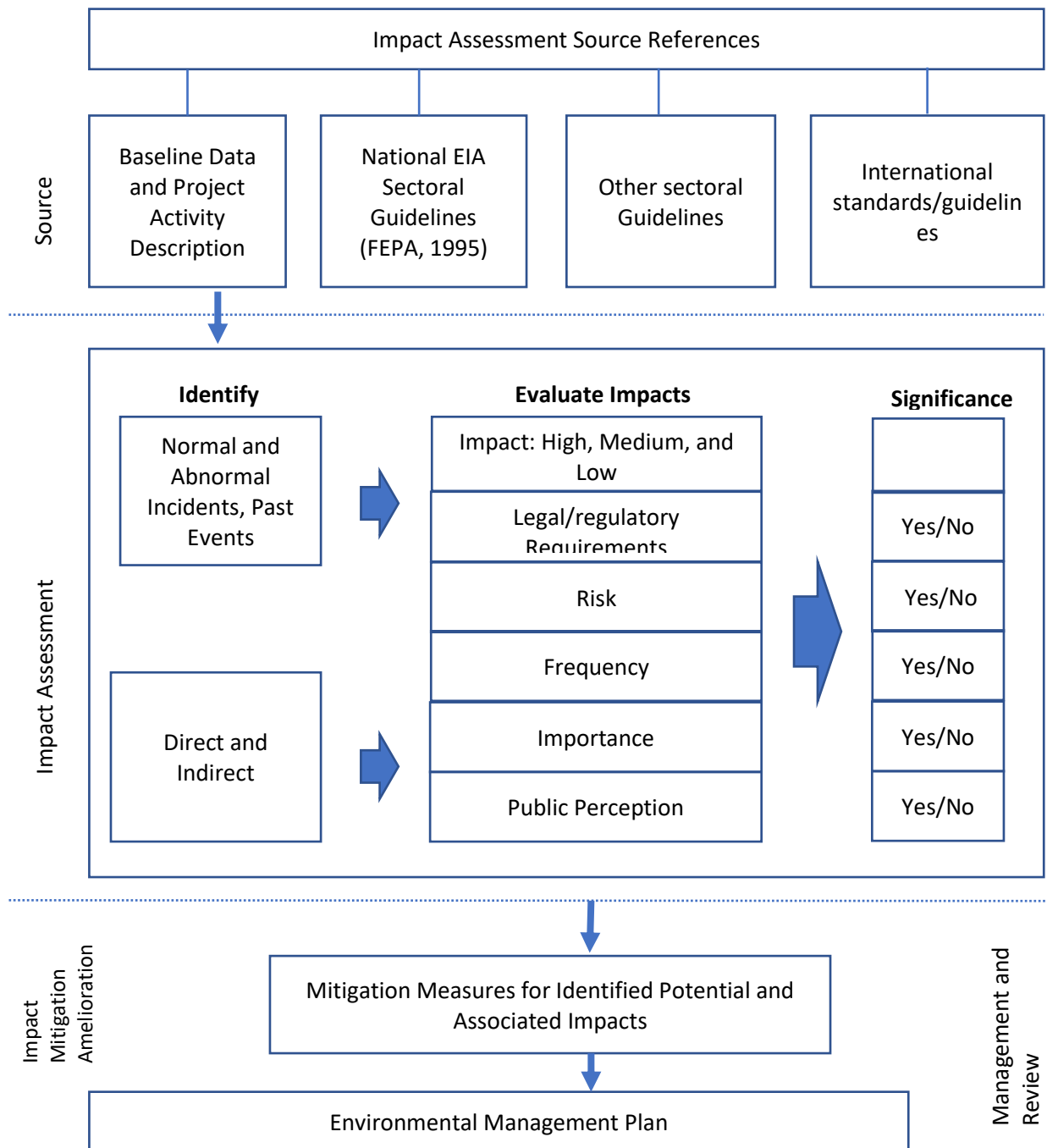


Figure 5.5: Impact Assessment Approach

Furthermore, all the reviewed reports included appraisal/Impact assessment in their report without an independent reporting step. They all recommend applying a combination of methodologies, including field data collection, laboratory analysis, literature review, and focused group discussions. Others are interviews and administration of questionnaires, remote sensing, and geographical information

systems, specifically community mapping, Venn diagram and paired needs ranking, case studies formulation, trend analysis, professional judgment, modelling, and matrices. The key objectives of the impact assessment step are as summarised in the EIA report of the Azura-Edo Independent Power Project (Opitz et al., 2012: A-10). It includes the following:

- (i) An analysis of how the project may interact with the baseline in order to define, predict and evaluate the likely extent and significance of environmental and social impacts that the project may cause.
- (ii) Development and description of acceptable and cost-effective mitigation measures that avoid, reduce, control, remedy or compensate for negative impacts and enhance positive benefits.
- (iii) Evaluation of the predicted positive and negative residual impacts of the project.
- (iv) Development of a system whereby mitigation measures would be integrated with the project and taken forward as commitments. This is achieved through the development of a provisional Environmental Management Plan.

The reviewed reports also identify the components of the impact assessment step, including predicting the consequences of project activities, evaluating the importance and significance of the impact, developing mitigation measures, and evaluating the significance of the residual impact. Most of the reports adopted the modified Leopold Matrix for impact evaluation, and the impact identification and Evaluation process was mainly done following the EIA process's general guidelines, which include the steps of impact identification, qualification, rating, and description. Figure. 5.5 above summarises the general approach adopted in most of the reviewed reports.

The reports reflect the use of a combination of qualitative and quantitative techniques for impact assessment. In qualitative terms, the impacts were rated as "low," "medium," or "high," based on their severity (consequence) and the probability of occurrence (likelihood). In general, the reports categorise the impacts to prioritise and analyse them.

Very few reports showed background data on vulnerable population groups. Reviewed reports did not appraise impacts based on their effect on vulnerable populations, and mitigation plans did not reflect any consideration for impact distribution amongst the various population groups. The emphasis on assessment was generally on environmental and socio-economic issues. Most socio-economic issues are major health determinants and are relevant to health. Such factors include water quality, air quality, economic impact, etc.

Although reporting did not have a separate step in all the reviewed reports, they all indicate that the EIA process and outcomes were drawn together into a draft EIA report meant to be submitted to the Federal Ministry of Environment (FMoH) in accordance with EIA requirements. They all state that the FMoH would disclose the EIA report to the public for review and comment and will also be the subject of a technical review by the Ministry and appointed experts. FMoH would base the decision to grant or deny the certification for the EIA on the outcome of the review process. The EIA reports are also disclosed in the World Bank's info shop, an online resource centre offering the public access to information on World Bank projects and programmes.

In general, the reviewed reports include the following headings (albeit with some slight variations in nomenclature and exemptions of one or two stages):

- (i) An executive summary that briefly summarises and highlights all the key points in the report.
- (ii) An introduction that introduces the project and gives some background information, such as the objectives, legal framework, and structure of the EIA.
- (iii) Project justification, which provides an overview of the project's necessity, value, sustainability, and options.
- (iv) Project description concentrates on project/process description, including project design, project location, project schedule/ phases, operating and maintenance philosophy, decommissioning and abandonment, raw materials use, by-products, and waste generation.

- (v) A current baseline description gives an overview of the study area, study approach, detailed method for baseline data generation, detailed project area's environmental and socio-economic status, and the study area's health status.
- (vi) Potential and Associated Impacts
- (vii) Mitigation and Amelioration
- (viii) Environmental and Social Management Plan (ESMP)
- (ix) Decommissioning
- (x) Conclusion and Recommendation

The executive summary was not included in the EIA report for the Federal University of Otuoke. Only very few reports included the EIA team for adequate transparency, and the limitations involved in the analysis were not stated in all the reports.

The recommendations were presented as mitigations in the mitigation chapter and summarised in the Environmental Management Plan (EMP). Mitigation measures are based on three primary criteria: prevention, reduction, and control. Preventive mitigations exclude significant potential impacts and risks by design and management measures. On the other hand, reductive mitigations minimise the effect of any associated impact that cannot be prevented. Implementing operational and management measures ensures that such impacts are reduced as much as reasonably possible. Mitigations targeted at impact control implement operational and management measures to ensure that residual associated impacts are reduced to a level as low as reasonably practicable.

Mitigation provides the opportunity for reasonable alternatives and adjustments to be implemented. Such adjustments can take the form of project designs, technology, location, size, and scale. However, the involvement of health experts or deliberate health considerations was seen as limited.

As called in some of the reports, the Environmental Management Plan (EMP) (EMP) or Environmental and Social Management Plan (ESMP) was identified as a tool for

properly managing the environmental concerns identified in the ESIA or EIA. According to the environmental management programme's long-term objectives, the EMP ensures compliance with legislation, HSE regulations, and host communities' interests. It also enhances the achievement and demonstration of sound environmental performance built around the principle of continuous improvement. Other objectives of the EMP were to integrate environmental concerns into the project's objectives and to rationalise and streamline environmental activities to add value in efficiency and effectiveness. The reviewed reports also added that effective implementation of the EMP would encourage and achieve the highest performance and response from individual employees and contractors and can also provide the standards for overall planning, operation, audit, and review. EMPs can enable management to establish environmental priorities that are applicable throughout the organisation.

The EMP included detailed plans for implementing mitigation and other enhancement measures. The auditing programme and the monitoring and evaluation procedure also formed part of the EMP. The EMP and monitoring procedures were based on the EIA module, which monitored equipment and processes for adherence to quality standards. The plan presented mitigation requirements, personnel, and an auditing budget. No health management plan included measurement of key health indexes and health outcomes during project implementation.

5.4.3 Health Content and Scope of Coverage of Health Impacts

Health considerations must be holistically addressed in all stages of the process to ensure adequate health coverage in any impact assessment. The reviewed document identified three major stages of impact assessment development for assessing health coverage. These stages span the entire impact assessment process and include the background data generation stage, the impact assessment stage, and the recommendation and mitigation stage.

5.4.3.1 Scope of Coverage of Health Impacts During Background Data Presentations

Although there was evidence of people with health backgrounds in some of the EIA reports preparation teams, there were no indications of their involvement level and stage. Evidence of the involvement of other health stakeholders, such as the personnel from the Ministry of Health (within the country), in the EIA process needed to be more clearly defined. There was also no reliance on any national health-related framework except for a few that used the Nigerian Upstream Petroleum Regulatory Commission directives (formerly DPR), which recommends some optional level of health coverage. However, most of the reports referred to some international legal frameworks, mainly from the World Bank and WHO, which specifically recommend health considerations.

Most of the report consistently provided background data on the biophysical and socio-economic environment, such as population biodiversity, land, soil, water, air, climate, material assets, cultural heritage, and the landscape. These factors are equally health determinants and can ultimately influence population health. However, background data on human health determinants such as institutional or healthcare systems and individual lifestyle or biological characteristics were not consistently covered across all reports. The reports presented very limited or no background data on these later groups of determinants. There was insufficient background information on health outcome indicators such as life expectancy, mortality rate, birth rate, hospital admissions, quality-adjusted life years (QALY), and disability-adjusted life years (DALY). A few of the reports presented (as part of the socio-economic background) some background data on the standard of living and the economic lifestyle of the host community. The EIA report of the Dangote refinery presented summarised data on disease prevalence, nutritional state, and available health institutions within the host community. In general, the reports reviewed contain background information on the origin of the projects, their sponsors, the projects' objectives, and the host community's demographic data.

While some reports relied on data from previously conducted EIA, some utilised the national health data as indicative of the health data for the project area. The EIA report for Agura IPP Project relied on the national gender and age profile. In contrast, the

EIA report for the Adibawa-Gbaran 3d-reshoot seismic data acquisition project adopted the data from previously concluded HIA reports to conclude that "study communities were in stable health but lacked functional modern health facilities making untrained traditional medical practitioners, and traditional birth attendants' major providers of medical services".

In summary, some of the health-related background data that were commonly covered by the reports include disease prevalence and healthcare infrastructure. They covered the most common diseases within the project area (mainly malaria) and other communicable diseases, including STIs, e.g., HIV. The EIA report of Agura IPP project utilised the national data and included the estimated maternal mortality rate for the year. It compared the crude birth rate with the crude death rate and included the total fertility rate for the year. Healthcare infrastructure refers to available healthcare facilities, e.g., hospitals, health centres, and similar health facilities. Some also described their operational state and effectiveness, such as waiting times. The EIA report of Agura IPP Project indicated that the general hospital that services the project area is noted for long waiting times, poor service, inadequate amenities and medical supplies and a shortage of healthcare personnel. Other background data covered are biophysical factors, demographic profile, socio-economic factors, and other community infrastructure. Biophysical factors include air quality, groundwater quality, surface water quality, water temperature, noise level, geology and soil type, soil pH, heavy metal concentrations, humidity, fauna and flora, and similar biophysical factors. The demographic profile covers sex and sexuality, age, marital status, religion, occupation, and ethnicity. In contrast, socio-economic factors cover economic factors such as occupation, major economic activities like trading and fishing, educational status, and income range. Etc. Other community infrastructure refers to educational facilities, waste management and sanitary conditions, water supply, road network and quality, and electricity supply.

5.4.4.2 Scope of Coverage of Health Impacts during Appraisal or Assessment of Impacts

In general, the EIA Report presented the likely significant effects of the project. It also captured the significant health effects of some health determinants within the project areas. The extent of health coverage amongst the reviewed reports varied depending

on the project type and the EIA team's interest. The significance of the impact of the project activities on the health determinants included in the background data was analysed in most of the reports. Impact significances are graded as minor, moderate and high. All the reports recommend mitigation measures designed to reduce the degree of significance of the impacts to acceptable or negligible levels.

The reviewed reports utilised a combination of methodological approaches, and the composition of the EIA team shows a multidisciplinary outlook. The health-related impacts commonly identified during the impact assessment stage include changes in the demographic makeup of the society due to the influx of workers and increased strain on local health services and other community infrastructure (under-resourced healthcare facilities noted in most project areas). Other commonly identified health impacts include the increased risk of road traffic accidents, injuries, water collisions, and other accidents. Health and safety hazards for on-site employees and increased risk of communicable diseases were also identified. Other highlighted factors that could indirectly affect health outcomes include the generation of direct, indirect, and induced employment, leading to increased household income through wages and project spending. An increase in economic activity among local businesses and the development of skills through job training and applied work experience were also identified as positive impacts that could affect health outcomes.

The reports considered public health approaches to healthcare, which emphasise disease prevention, protection, promotion, and general healthcare activities. The report's inclination to public health approaches to healthcare ensures that most mitigation measures were aimed at disease prevention and promoting good health. The EIA report of Agura IPP Project states that its health plan will focus on managing and minimising communicable diseases amongst the workforce and locally affected communities. It further states that it will set out systems for prevention, early detection, and treatment of disease, covering how work accidents will be dealt with and the use of on-site health facilities versus referrals to local or national health services.

The results show that there are no clearly defined considerations for the disproportional impacts on vulnerable population groups. The EIA of Adibawa-Gbaran 3D-Reshoot Seismic Data Acquisition Project identifies nuisance noise, dust, emissions, lighting, and soil contamination as part of impacts from the project's

construction phase. The report went ahead to recommend the use of machinery with acceptable noise levels and encouraged the limiting of on-site construction time limit to the barest minimum. The report also recommends the provision of ear mufflers (to be worn where noise levels are above acceptable limits) and the application of the SPDC HSE policy of wearing earmuffs/ plugs in all construction sites. It further recommends the provision of sufficient separation distances for sources of high-energy sound to reduce noise levels and the adherence to standards and procedures for waste segregation, treatment, and disposal.

The above mitigation measures reflect the approach used in most reports—an approach that does not make enough provision for vulnerable population groups, such as people with special health conditions, pregnant women, young children, and people with similar protected characteristics.

Most reports did not link the potential or identify environmental impacts to the relevant health-specific factors. For instance, an identified impact on soil or surface water does not link it to its effects on water-related disease and the changes in disease prevalence, which could be a guide for proper monitoring and evaluation. The EIA report of the Dodo North Non-Associated Gas (NAG) wells development project highlighted the contamination and degradation of soil, groundwater and surface water from dredge spoils, solids/drilling wastes and effluent discharges. It recommended the proper segregation of waste before disposal and the proper disposal and monitoring of disposed waste from 'cradle to grave'. Giving a health perspective will further highlight the linkage between this waste and the associated health concerns. In this regard, an additional area of concern could be the residual impacts that cannot be eliminated and their effects on vulnerable population groups.

Most reports did not categorically indicate the composition of the stakeholders consulted during the EIA. However, some reports identify some government departments that were consulted before the fieldwork. A typical example is the EIA report of Agura IPP project, which listed the organisations that were consulted, including the Federal Ministry of Environment (FMoE), Department of Petroleum Resources (DPR), Lagos State Ministry of Environment (and Lagos State Environmental Protection Agency), and the host communities (Agura, Ijede, Ipankan and Egbin Communities). The EIA report of Azura-Edo Independent Power Project

listed the government departments with which it consulted and had a series of meetings to include the Edo State Ministry of Lands, Surveys and Housing; Ministry of Environment and Public Utilities (MEPU); Edo State Rural Electrification Board; Edo State Ministry of Energy and Water Resources; Edo State Public Private Partnership office; and Unhumnwonde Local Government Council. Those regions' federal and state health departments are conspicuously absent from the list of consulted stakeholders. This trend is replicated in most reports.

5.4.4.3 Scope of Coverage of Health Impacts in Recommendations and Mitigations

Unlike the HIA, where the recommendations presented are not automatically expected to elicit the developer's formal commitment, the mitigations given as part of the EIA are formally binding and present a great opportunity for health issues to be properly addressed. Mitigation measures in the reviewed reports were designed to target the identified impacts.

All the reviewed reports included an Environmental Management Plan (EMP) in line with the National EIA guidelines. The EMP contains a detailed breakdown of plans, procedures, and resources for implementing and monitoring the recommended mitigations. Monitoring in this regard focuses on implementing the mitigation plans (to ensure smooth adherence to recommended standards) and other local environmental protection indicators. Reference to monitoring in most of the EMP does not emphasise monitoring health-related indicators that might be altered because of impacts from the project.

Table 5.2: Coverage of Health Determinants and Outcomes in the Final Recommendations

| Coverage of health determinants and outcomes in the final recommendations |
|--|
| Points to consider <ul style="list-style-type: none"> • Does the assessment adhere to all the conditions in the recommendation stage of this checklist? • Does the recommendation adequately provide alternative plans or mitigation approaches to address all health impacts identified and relate same to their effects on health outcomes? • Does the recommendation include mitigations or alternatives to address any inequality or equity issue that may have been identified during the assessment? |
| Does it exhaustively consider all possible health outcomes including unreported cases, feeling and general effect on standard of living |

The points listed in Table 5.2 and the checklist developed in Study Two (Appendix H) were used to assess the reports on performance and coverage. The Otuoke EIA was selected for further evaluation. Consequently, a fourth study was designed to assess EIA practices in the field and the implementation of mitigations. The selected report formed the basis for evaluating the level of implementation of mitigations contained in the EMP. The fourth study was necessary to establish the link between actual practice and documented claims in reports.

CHAPTER SIX

Results of Study Four

6.0 Introduction

This chapter presents the detailed results of study 4. The results are presented based on the main themes identified. The methodology chapter addressed the data analysis processes for study four and the need to adopt a descriptive phenomenological approach. Two approaches of results presentation have been primarily used in related research literature: presentation based on themes and presentation based on relevance to research questions or research objects (Burnard, 2008). The results for study 4 are presented based on the main themes, which means that the reporting of findings comes under each main Theme. The discussion chapter will elaborate on links between the responses from each main Theme and the research objectives. The presentation method reflects the researcher's approach towards inscribing a meaningful structure to respondents' lived experiences.

The central concept behind qualitative research is the textual presentation of reality. As Eduard (2004:327) states, *"the particular quality of social interaction, its fleetingness accompanied by meaning production, can only be subjected to analysis if it is first put into the form of a text"*.

To reconstruct social realities, various researchers have suggested abandoning traditional objectivist assumptions and adopting the hermeneutic position (Geertz, 1973; Soeffner, 1989; Eduard, 2004). In this chapter, the researcher constructs relevance to events (research outcome) and presents respondents' lived experiences. In doing this, the presentation accepts that reality is not a homogeneous structure but is characterised by different interpretations, complexities, ambiguities and sometimes inconsistencies (Geertz, 1973). The adopted analytical approach aligns with the constructivist epistemological viewpoint. The event description took cognisance of this perspective when determining how much and which data to present. Bergmann (1985) suggests that every narrative depicts a construction designed for a specific purpose and audience. Therefore, to construct:

means neither to depict nor to reproduce a reality, but to discover how a meaning (and what kind of meaning) is established and created on the basis of what resources, and how reality (and what kind of reality) is produced in and through situations, symbols and objectification (Eduard, 2004:327)

The principle of reflexivity, which considers the perception of reality, was also considered when adopting the analytical approach. These considerations guided the approach of resolving the pertinent problem of analysing data and presenting results emanating from the data. The Analysis of Study Four focused on describing the milieu and experiences, emphasising typical structures (concerning themes). Van-Maanen (1988) identified three main types of textual presentation: realistic presentation, confessional description, and impressionistic description. Although the researcher tries to present the results realistically, functioning as an impartial observer and detaching himself from the text as much as possible, it is pertinent to note that elements of confessional description emanating from practical fieldwork experiences and feelings would influence his interpretation of the data and subsequent conclusions.

6.1 Themes Identification

Reflecting on the overall research aim and objectives presented in chapter one is essential to fully understand the relevance of the identified themes and how they help meet the research's objectives.

The research aims to evaluate the use and implementation of integrated impact assessment and improve the process in the Nigerian Niger Delta region with reference to health impact assessment. To achieve this aim, the research identified four primary objectives. The first is to develop and validate an evaluation tool/checklist for assessing the content and quality of integrated impact assessment, especially about the health content. The second is to identify relevant and recent integrated impact assessments carried out in the Nigerian Niger Delta region. The third objective is to appraise the identified integrated impact assessments (for content and quality) using the developed tool specifically designed for assessing the quality and health content of completed integrated impact assessments. The final objective is to recommend improvements to the IIA processes by developing guidelines for improving health

integration in environmental impact assessment while enhancing the implementation of recommended mitigations. The analysis of interview data and themes is targeted to meet these research objectives.

Data analysis identified two sets of themes. The thematic approach allows flexibility, so both deductive and inductive approaches were employed in theme formation.

6.2 Summary of Themes, Interrelationships and Relevance

Data analysis identified two sets of themes. The thematic approach allowed for flexibility; hence, deductive, and inductive approaches were employed in theme formation. The first set of primary themes were identified a priori and includes IIA practice in Nigeria, community participation in IIA/EIA practice, health coverage in IIA/EIA practice, implementation of recommendation from IIA in the Niger Delta, and prospects and recommendations. They are coded as themes A1, A2, A3, A4, and A5 respectively. These themes are closely linked and collectively help address the research aim. While the theme "IIA Practice in Nigeria", looks at the overall mode of practice with regards to scope, procedures, awareness, and when to commission IIA, other themes such as "community participation", "implementation", and "health coverage" looks at specific aspects of practice. These primary themes were selected to enhance and encourage a deep and detailed exploration of the main research phenomena. They are interrelated and linked as most challenges identified in one Theme may influence outcomes in the other Theme. Each identified primary Theme is linked to a specific research objective and addresses a specific component of IIA practice. This approach helps to minimise overlaps. Subthemes are generated to expatiate further and explore relevant details.

Themes A1 to A5 all contributed to answering the research question, with Theme A3 specifically addressing the level of health coverage. A breakdown of the overall research aim produced two uniquely identified challenges that define the research objectives. These two issues include: understanding the practice and implementation of IIA in the Nigerian Niger Delta region and improving the Integrated Impact Assessment process with special reference to Health Impact Assessment. Themes A1, A2 and A3 satisfied the first identified challenge, while Themes A4 and A5 satisfied the second.

Four inductively identified themes also emerged from the data. They include the legal framework for EIA in Nigeria, funding for the impact assessment process, HIA practice in Nigeria, and the EIA of Federal University, Otuoke. Themes B1 to B4 adds more dept to answering the research question. Themes B1 and B2 elaborate further on the practice of IIA in Nigeria (which is a significant objective of the research), and theme B3 explores the practice of HIA in the region with reference to respondents' views on the general practice of HIA as a standalone document. Theme B4 evaluates the processes involved in the development of a sampled EIA report (the FUIO EIA report) to relate between actual life practice and the presentations and description of procedures as presented in most submitted reports. It seeks to discuss what could be obtainable in actual practice and highlights practical experiences and standard practices in IIA practice within the region.

Most of the research objectives were also satisfied in previous studies. Themes A1 to A5 precisely satisfy the fourth objective and address the requirements of objectives one, two, and three. Table 6.1 and Figure 6.1 present the details of the themes, their sub-themes, and their linkages.

Table 6.1: Theme Categories, Codes, and the Sub-Themes

| Theme Categories | Theme Codes/Names | Sub-Themes |
|-------------------|--|---|
| A: Primary themes | A1: IIA practice In Nigeria | <ul style="list-style-type: none"> • How Impact Assessment is practiced in the region • When impact Assessment is required or conducted • The commissioning Process: Scoping • Data gathering process/ Data analysis process. • Reporting and Dissemination: The awareness levels • Challenges for Impact Assessment • Stakeholders Involved |
| | A2: Community participation in IIA/EIA practice | <ul style="list-style-type: none"> • The level of community involvement, • mode of participation, • challenges to participation, • benefits • how the process can be improved. |
| | A3: Health coverage in IIA/EIA practice | <ul style="list-style-type: none"> • level of coverage • the process of health integration • challenges • conflicts of interest and prospects |

| | | |
|----------------------------|---|--|
| | A4: Implementation of recommended mitigations from IIA in the Nigerian Niger delta | <ul style="list-style-type: none"> • levels of implementation • challenges to implementation • consequences of implementation/non-implementation • enforcement |
| | A5: Prospects and recommendations | <ul style="list-style-type: none"> • Future goals and prospects • Recommendations for improvement of the process. |
| B: Secondary themes | B1: Legal Framework for EIA in Nigeria | <ul style="list-style-type: none"> • Available legislative requirements and supporting laws. • How Practitioners adapt and marry all relevant legal requirements. |
| | B2: Funding for the impact assessment process | <ul style="list-style-type: none"> • Mode of funding for commissioning, implementation, and regulation of the IIA process • Challenges and prospects. |
| | B3: HIA practice in Nigeria | <ul style="list-style-type: none"> • Mode of practice • knowledge amongst IIA practitioners. |
| | B4: EIA of Federal University, Otuoke | <ul style="list-style-type: none"> • Views of respondents on the EIA report experiences. • challenges. |

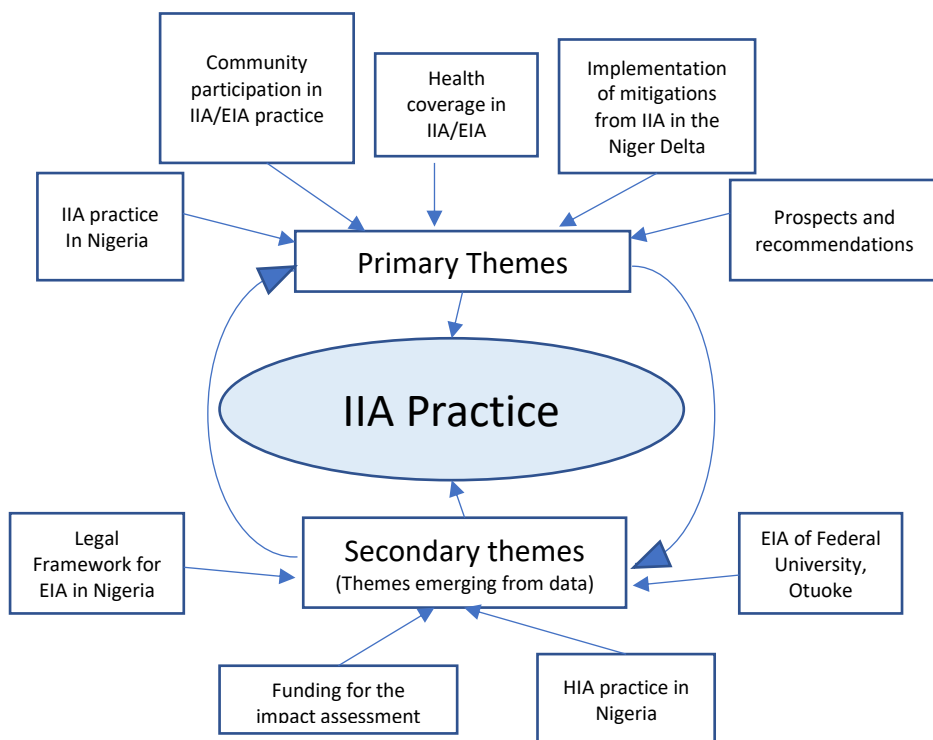


Figure 6.1: Schematic Representation of the Main Themes in IIA Practice in Nigeria.

6.2.1 Theme A1: IIA Practice in Nigeria

This theme seeks to provide an overview of the IIA process in Nigeria. It captures the respondents' views on how impact assessment is practised, when it is required or conducted, the commissioning process, scoping, data gathering/data analysis process, reporting, and dissemination. Other themes include awareness levels, challenges to the IIA/EIA process, and the stakeholders involved.

6.2.1.1 The IIA Process

Most respondents presented a common understanding of the IIA process (commonly and interchangeably referred to as EIA). Respondent A01 described it as:

A process that is carried out when a government or NGO wants to establish something, either a structure or a programme, whereby the concerned organisation or government body would carry out some research concerning the environment.

Respondent B02, who is a community leader in Otuoke, described it as:

...the process where the originators of new projects will try to engage the community and study the environment to understand how they can give back to the community in order to make up for the impact that the project will have on the community.

Respondent C03 thinks that:

It is done when a company or government wants to start up a project in a community, so they would have to study the environment to know the impact that it will have on the environment and the people.

All the community dwellers showed understanding of the process, with Respondent E05 stating that EIA is conducted whenever a company wants to embark on any project.

All the category A respondents (the EIA/IIA practitioners) reported that impact assessment is practised as an integration of all impacts in one impact assessment

document and is mostly referred to as the EIA, ESIA or ESHIA. Respondent P16 had this to say:

What is practiced in Nigeria is what is called integrated EIA or call it ESIA, where you have a multidisciplinary team approaching the impact studies. You have the biophysical team, socio economic team, and health impact team, forming one team to undertake the EIA studies.

Respondent P16 continued by stating, "once they say EIA, you have to take care of the biophysical, socio-economic and health". Most practitioners espoused a similar viewpoint to Respondent K11, who stated that:

in Nigeria, what we practice is integrated impact assessment... we all know that EIA is a multidisciplinary assessment, so under that guise, we have experts handling environmental aspect which has to do with your water, soil, vegetation, wildlife, air quality and physiology. Another set of experts handles the social impact assessment... and the health impact assessment is still being handled by another set of experts. By the end, these people are pulled together and collated to give you the full report either as EIA, ESIA or ESHIA (Respondent K11)

6.2.1.2 When Impact Assessment is Required or Conducted

This heading was addressed from two perspectives: circumstances where impact assessment is necessary and the time it should be conducted when considering the project stage. All the respondents described impact assessment as an exercise that should be done prospectively before the commencement of the project. In considering the time it should be conducted with reference to the stage of the project, respondent N14 referred to the EIA Act number 86 of 1992 and stated that:

before a private concern or a public concern embarks on any major project that can have a significant impact on the environment such a project must be subjected to the conduct of an EIA.

The respondent further elaborated on the quote by saying that impact assessments are best conducted before the project's commencement to influence the project's design and implementation and mitigate the impact in all stages of project execution.

Respondent G07 illustrated how a state government awarded a contract for a significant construction project without making provision for EIA and stressed that impact assessment should be included and allocated due time in the timeframe of projects. The respondent has this to say:

I usually tell them not to start work until I come and take the baseline data. Let me take the data from an undisturbed environment.

Respondent I09 also reiterated this point and called it the "Nigerian Factor". The respondent stated that "for most EIAs...construction has been started before it's done", meaning that most proponents of EIAs would start the construction phase before the EIA commencement of the EIA.

This prospective approach was advocated with regard to the typical impact assessment of "major projects", which is a legal requirement and commonly practised by practitioners. Concurrent assessments to evaluate impacts during the operational phase of projects were not really addressed by most practitioners but were mentioned by a few as part of the monitoring responsibilities of the regulatory bodies. Respondent I09 mentioned the existence of some environmental evaluation reports (EER), which he said should be conducted independently at any time to evaluate the state of the environment. The respondents made no mention of retrospective assessment.

With regards to circumstances where impact assessment is necessary, all respondents described it from the perspective of the EIA law, which, according to them, stipulates that impact assessment is required whenever a "major project" is to be constructed. The community dwellers did not specifically categorise what type of project or programme requires impact assessment. Respondent A01 informally said it's required for "anything, either a structure or a programme". Other community dwellers simply used "New projects", "a project", "major projects", and "any project", respectively. The practitioners, on their part, stated that impact assessment is mainly carried out or should be carried out whenever a "major" project, policy, or programme of government is meant to be executed. In buttressing this fact, Respondent N14 had this to say:

What we understand by EIA in Nigeria is a systematic identification and examination...measurement of biophysical and socio-economic consequences of projects, policies, and programs. In other words, projects or even government policies or programs must be subject to EIA or the major components, i.e., socio-economic, biophysical, and even health consequences of such projects must be subject to EIA.

Respondent H08 added: "It is required that EIA be carried out whenever some projects of some magnitude are commissioned to be constructed." Respondents did not address the specific definition of a 'major' project; however, respondent I09 stated that it is the duty of the regulatory body to decide which project requires an impact assessment.

6.2.1.3 The Commissioning Process

All the respondents agreed that the EIAs are always or should be initiated by the project proponents. However, responded G07 stated that some government projects are awarded without provision for EIA. He further explained that in such circumstances, the projects' contractors are often obligated to commission an EIA. He explained that:

If it is a government project...and then it's funded by the government itself and not through loans (where the donor might mandatorily require an EIA), you find them either not doing the EIA at all, or the contractor would initiate the EIA after they have already done the construction.

Respondent O15 explained the commencement of the EIA process as stated below:

We start with the letter of consent to the regulators (letter of intent to conduct an EIA), the next thing is that we will have a Terms of reference (TOR) designed. The TOR will take into cognisance the project that will be done, the options we have, the environmental screening and ...the sampling design. For example, if the project is like a mini gas refinery or plant, the sampling design will take into cognisance the air direction, the wind direction, and water bodies around the place, etc. After that, the TOR will now be submitted, and the

environmental screening workshop will be held, after which the TOR will be approved, and personnel recruited.

Respondent H08 talked about the team formation after the initiators have informed the regulators of their intent to conduct the EIA. He stated that:

Initially, when a study is to be carried out, a team of environmental experts is put together, and the team comprises the soil expert, somebody from geology, ... 'water chemistry', soil chemistry, ... health impacts and ...social impact. A team usually comprises people ranging from 9 ... to 15, depending on the project involved.

Figure 6.2 summarises the stages and processes of commissioning and executing the EIA.

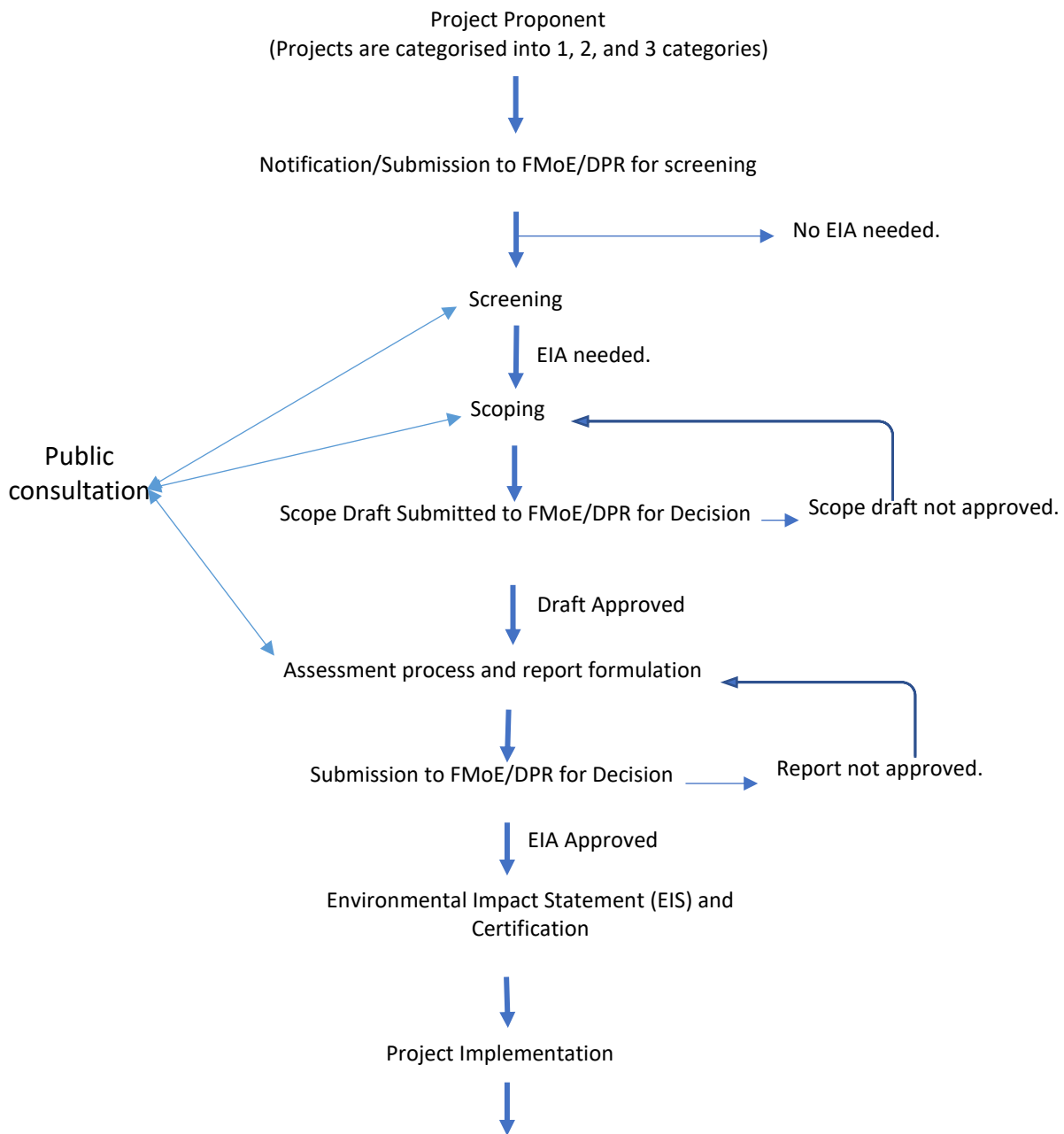


Figure 6.2: EIA Process in Nigeria

6.2.1.4 SCOPING

Respondents mentioned scoping as the stage in which the level and depth of the study would be determined. Respondent K11 mentioned that: "after the official decision has been made to embark on impact assessment, the parties involved would make an initial site visit to categorise the project as A, B, or C (depending on the nature and depth of review needed). This will be followed by the scoping and screening workshop". He further described the scoping exercise as a stage where decisions on the terms of reference for the entire process would be agreed on. Respondent M13 described the scoping workshop as a process involving all stakeholders, often accompanied by the presentation of proposed activities by the consultants or impact assessment practitioners.

6.2.1.5 Data Gathering and Analysis

In their description of their lived experiences in impact assessment, some of the respondents (the practitioners) talked about the various approaches used in generating data. The most mentioned was the use of questionnaires for gathering baseline data. Respondent M13 stated that "we collect data through questionnaires and interviews by talking to key informants and community people". Many of the respondents reiterated the fact that EIA or impact assessment is a multidisciplinary exercise and, as such, encompasses many data generation approaches depending on the environment and the kind of impact assessed. Respondent J10 stated that:

The EIA exercise... comprises different teams. There is hydrogeology, hydro biology, vegetation, and wildlife, as well as air quality, soil, health, socioeconomics, and the rest. All these teams gather different data about people and the environment, which means different approaches to data generation.

Respondent 015 elaborated on this by explaining the multidisciplinary nature of EIA and mentioning some ways through which data are generated. An excerpt from his explanation is presented below:

After team formations, we go to the field to get our data. The social impact and the health teams will go to the community...; they will check the health data of the people at the community health centres, and they'll take some health

measurements of the people available. ...After looking at the leadership structure of the community (observation), the social impact assessment also goes to the market to check the fluctuations in prices... while the biophysical team will head into the environment to check for the water quality and take samples to the laboratory. The vegetation specialist would look at the vegetation of the area and the composition of the vegetation. We also have the wildlife specialist who talks to hunters, sets some life cameras to look at the kind of animals around the place, and watches out to see if the place is a habitat for endangered species. We also go with a geologist who would look at the soil, study the history of natural earth processes, and check whether we will drill new boreholes... to look at water quality. We do triangulation to look at the flow of boreholes to see if there is any contaminant already.

Respondent F06 stated that "everybody (different teams) develops their scheme for which they want to gather their data; they usually do that in teams, and the reports are submitted individually to form the final report".

Respondent N14 identified the process involved in health data gathering and gave a brief description of the process by stating that:

After adequate consultation, our health impact assessors often move into the community, assess the available equipment, consult with the people, have some interaction with the people, and ... find out what the prevalent health situation is in that community. They also use the information ... to predict the project's likely impact on people's health.

Data generation approaches identified by respondents included common quantitative and qualitative methods of data generation such as the use of questionnaires/surveys, interviews, field notes, interpretation of documents, physical measurements, laboratory analysis and observations.

Respondent K11 concluded on this by stating that we "collect both qualitative and quantitative data in the way and manner we are supposed to collect and are closely monitored by the regulators".

Only a few details were given on specific approaches employed during data analysis. However, respondents generally stated that each team (the Biophysical, health and socio-economic teams) performed their analysis independently and submitted reports for onward deliberation and inclusion in the main report. Methods of analysis were dependent on the type of data generated. The regulators should constantly monitor data generation and analysis processes to ensure compliance with standards. Respondent K11 further stated that the regulators "would witness the analysis of those samples to be sure that they were analysed using the recommended methods".

6.2.1.6 Reporting and Dissemination

According to practitioners, report drafting and subsequent submission for approval and onward dissemination were independent stages of the EIA process.

After data analysis and impact evaluations, each team is responsible for writing a report for their respective teams. The draft report would then be submitted to the "head consultant" or the central team for collation. Respondent F06 explained the process as follows:

Usually, the reports are submitted individually, and the 'head consultant' or the team lead is now responsible for putting together the data or information gathered from each of those groups. They are usually put together in a sequence so that whoever gets to review the final document has a perfect follow-through from all the data sets that were collated, interpreted, and reported.

The final report is a compilation of drafts from each team, and it is centrally processed by the lead consultant or team lead. Respondent 015 stated that individual reports from each team submitted for compilation all collectively go "through thorough in-house review, before it is now submitted to the Department of Petroleum Resources (DPR) or Federal Ministry of Environment (FMoE), where it would now undergo technical review."

According to most respondents, the final draft report prepared by the central team becomes the report that should subsequently be submitted to the regulators for approval. The draft report, if approved, would pass through a refining process whereby

the report would be published for public comments and inputs collated for final adjustment.

Respondent K11 explained the processes leading up to the refining exercise as follows:

The draft report would be displayed for public review by the local and state governments and the federal Ministry of Environment. This would be accompanied by a newspaper publication and radio/TV announcement concerning the report in a local radio/TV station. A window period of 21 working days would be allowed for the display so that people would come and look at the report and make comments. The local, state, and federal governments will collate comments that came through them and submit them for input during the technical review.

He further explained that the technical review involves experts and stakeholders from NGOs, local government, state government, federal government, and community representatives. While respondent K11 explained the process based on the Federal Ministry of Environment (FMoE) requirements, Respondent 015 separated the requirement of the FMoE from that of the DPR. He stated that while the FMoE requires a 21-day public display and subsequent public review, the DPR would only require an in-house technical review. Other respondents only explained the process based on the requirements of the FMoE but acknowledged that there are two central regulatory bodies for EIA.

After refining, the approved report is published and handed over to the parties involved for implementation.

6.2.1.7 The Awareness Levels

Respondents expressed that the awareness level for environmental impact assessment is 'high'. The community dwellers have previous knowledge of EIA and have participated in at least one environmental impact assessment. Respondent J10 stated that:

People are now aware, and for every project that has been coming on stream, the people around that particular project would want to know if environmental,

socio-economic, and health impacts have been conducted before the project is allowed to start or before they give their support.

He attributed the increased interest and awareness to "the degradation of the environment, particularly in the Niger Delta". Respondents N14 and M13 attributed the high awareness level to EIA being a legal requirement. They further stated that "most people comply because of fear of prosecution". Most respondents stated that there is a high level of industrial activity in the Niger Delta region. They explained that the attendant environmental impact and the impact on the general well-being of people in the region have caused people to be more vigilant.

Respondents, however, showed understanding and awareness of EIA as an environmental tool but little understanding or awareness of HIA as an independent impact assessment. All the respondents stated that they have not been 'part of' or 'heard of' any HIA as a standalone document. Respondent J10, however, stated that "Health is being taken very seriously now because the stakeholders are beginning to understand some of the impacts of the degradation of the environment ... on their health."

As stated earlier, all the practitioners accepted that the EIA process covers all environmental, health and socio-economic impacts.

6.2.1.8 Challenges to Impact Assessment

In relating their lived experiences, the respondents explained the challenges hindering the practice of environmental impact assessment in the region. These challenges were inductively generated from the data and are summarised under the under-listed headings:

- 1) Insecurity and Societal restiveness.
- 2) Inaccessibility due to challenging terrain (topography, etc.).
- 3) Corruption.
- 4) History of non-implementation of mitigation measures.
- 5) Lack of participants' appetite due to lack of trust in governance.
- 6) Lack of adequate educational and training.
- 7) Poor funding structure.

- 8) Resources (Human capital and finance): High cost of carrying out the EIA.
- 9) Insincerity on the part of proponents of projects.
- 10) Lack of Strong Regulations and Inconsistency in regulatory guidance.
- 11) The reluctance of government bodies to carry out EIA on their projects.
- 12) Poor cultural practices.
- 13) Sharp practices and greed among community leaders and other stakeholders.
- 14) Lack of adequate database for baseline information.
- 15) Lack of continuity by successive government and project abandonment/Delay.
- 16) Project timeframe and time allocated for the EIA (Not enough time is given for studies).
- 17) Politicising the process or political interference.
- 18) Inadequate community participation.
- 19) Misconceptions about what constitutes health impacts.
- 20) Culture of prioritising Environmental and Social impacts.
- 21) Imbalance in Budgeting.
- 22) Quality of EMPs produced: clarity in EMPs.
- 23) Duplication of Responsibilities

Table 6.2 summarises the challenges and some unique quotes from respondents regarding each challenge. Subsequent themes present more details and explanations of the challenges.

Table 6.2: Challenges or factors Inhibiting Certain Components or all Aspects of EIA.

| Challenges or factors | Respondents | Unique quote (s) | Component where Challenge Is MOST Felt |
|---|-------------------------------|---|---|
| Insecurity and Societal restiveness | A01, P16, FO6, H08, N14 | we are also facing security traits, ... minor stealing's, ... burglary, kidnaping etc. These things put fears in people and don't allow them to fully participate when they are called to do so (Respondent A01); "So it can be challenging when you enter a community where the youths are turbulent" (Respondent H08) | Community participation; Implementation of mitigations; The EIA process |
| Inaccessibility due to challenging terrain (topography etc.) | P16, J10 | "So, access to communities is one challenge, access in terms of topography" (Respondent P16) | Community participation; The EIA process |
| Corruption | G07, 109, K11, E05, O15, E04, | were focussed on profiteering, embezzling money meant for the community and not carrying every community | Community participation; |

| | | | |
|--|--|--|---|
| | C03, J10, L12, A01, F06, B02, C03, | member along, especially those whose land and economic activities were directly affected” (Respondent E05); “That takes us to the aspect of corruption. There is no better dictionary for corruption in Nigeria. It’s a routine in the country” (Respondent L12) | Implementation of mitigations; The EIA process |
| History of non-implementation of mitigation measures | G07, B02, M13, J10, H08, I09, L12, A01, F06, P16 | “They don’t even do the EIA talk less of implementing mitigations”. (Respondent B02) | Community participation; The EIA process |
| Lack of participants appetite due to lack of trust in governance | P16, M13, L12, A01, D04, E05, J10 | “In most part, people are so unhappy that government is not doing enough... people are annoyed, people are angry, and they tend to be antagonistic” (Respondent P16) | Community participation; The EIA process |
| Lack of adequate educational and training | N14, G07, H08, K11, O15, D04, E05, I09, J10 | “The educational level, particularly in the riverine area is very low... What most of them are after is their immediate benefit, mostly money” (Respondent G07) | Community participation; Implementation of mitigations; The EIA process |
| Poor funding structure | O15, | “So, ‘he that pays the piper, detects the tune’. Government should make the sector really financially independent and empower the regulators to really understand the technicalities of their work” Respondent O15 | Community participation; Implementation of mitigations; The EIA process |
| Resources (Human capital and finance): Hight cost of carrying out the EIA | N14, G07, 109, EO5, J10 | “The exercise is capital intensive as it involves organising of public forum and other engagements..., so if the proponent of the project does not release sufficient funds for that exercise to be carried out, it could pose a challenge” (Respondent N14) | Community participation; Implementation of mitigations; The EIA process |
| Insincerity on the part of proponents of projects | CO3, I09, G07, F06, J10, O15, D04, EO5 | “Like I said before, I don’t have any knowledge about the EIA, I don’t think they have done anything. If they meant well, the report would have been done properly. (Respondent C03) | Community participation; Implementation of mitigations; The EIA process |
| Lack of Strong Regulations and | O15, J10, K11, L12, D04, N14 | “We need strong regulations. For example, there was a times that you discover that regulators don’t even | Community participation; |

| | | | |
|---|--|---|---|
| Inconsistency in regulatory guidance | | understand the scope of the work” (Respondent O15) “Some of the penalties are so minimal that ...a lot of proponents of projects wouldn’t mind deliberately breaking the law” (Respondent N14) | Implementation of mitigations: The EIA process |
| Reluctance of government body to carry out EIA on their projects | G07, F06 | “...if it is a government project, for instance in Nigeria here, and ... funded by government ...you find them not doing the EIA” (Respondent G07) | The EIA processes. |
| Poor cultural practices | K11, O15, F06, | “Some of the challenges are related to our culture. An example is the culture that women don’t talk when men are talking, (Respondent O15) | Community participation: The EIA process |
| Sharp practices and greed amongst community leaders and other stakeholders | G07, 109, K11, E05, O15, E04, C03, F06 | “a lot of community leaders are not sincere to their followers, and it normally creates a lot of issues” (Respondent I09) | Community participation; The EIA process |
| Lack of adequate data base for baseline information | J10, G07 | “In the core communities (the villages) of the Niger delta, health data will be lacking because there are no health centres or hospitals in the communities” (Respondent J10) | Health and Social coverage; The EIA process |
| Lack of continuity by successive government and project abandonment/Delay | L12, K11 | “After four or five years of a government., another govt, comes...and start all over again” (Respondent L12). “A delayed project like the abandonment of a tropicana project in AKS is a challenge” (Respondent K11). | The EIA process |
| Project timeframe and time allocated for the EIA (Not enough time is given for studies) | 109, G07, M13, E05 | “Most of the construction, most of the projects are usually carried out before the assessment”. (Respondent I09); “You begin to hurry consultants... not enough time is given for studies” (Respondent M13) | The EIA process |
| Politicising the process or political interference | F06, 109, E05, G07, O15 | “Some of those local people politicise these issues... they will put political pressure and try to hinder the exercise”. (Respondent F06) | Community participation; Implementation of mitigations; the EIA process |

| | | | |
|---|-----------------------------------|---|---|
| Inadequate community participation | A01, D04, A01, B02, C03, E05, G07 | “Well, in the first instance, we don’t even know that there was such a report. It’s a case of us not fully being aware that there was such a document and as such we have not been taking cognisance of what has been implemented or not”. (Respondent A01) | Implementation of mitigations; Health and Social impact coverage; the EIA process |
| Misconceptions about what constitutes health impacts. | G07, H08, I09 | “if you are doing a road project for instance, there is nothing you need about the health of the people as much...” (Respondent G07) | Health impact coverage; the EIA process |
| Culture of prioritising Environmental and Social impacts | N14, O15, M13, J10, C03 | “... focus was more or less on the biophysical because those who started it were ecologist”. (Respondent M13) | Health and Social impact coverage; the EIA process |
| Imbalance in Budgeting | H08, J10, M13 | “... there are sorts of biases in terms of what is being paid to the consultants” (Respondent H08), | Health impact coverage; the EIA process |
| Quality of EMPs produced: clarity in EMPs | O15, H08, | “I discover that most of the management plan especially those on things to be done in the community, intervention programmes etc, there is no indices to follow through”. (Respondent O15) | Implementation of mitigations; the EIA process |
| Duplication of Responsibilities | K11, O15 | “Somewhere along the line there is a conflict of interest in the sense that you might write an EIA which is satisfactory to the FMOE, but to DPR it is not satisfactory” (Respondent K11) | The EIA process |

6.2.1.9 Stakeholders Involved

The primary stakeholders involved in EIA, as explained by respondents, are:

- ❖ Project proponents and their representatives,
- ❖ Regulators and their representatives,
- ❖ Community dwellers and their representatives
- ❖ Independent Consultants and their representatives
- ❖ Consulting firms and their representatives,
- ❖ NGOs and other interested parties, e.g., the union of practitioners, academic researchers, donor agencies, etc.

- ❖ Government representatives (federal, state, and local government representatives).

6.2.1.10 Theme (A1) Summary and Relationship with Other Themes

Theme A1 focused mainly on the overall procedures and practice of IIA in the region and dealt with other methodological issues. It addressed inquiries about when, how, and where IIA studies are/should be conducted. As a follow-up, various components of EHIA practice will be independently analysed in the following Theme. Community participation is vital in IIA practice, and the participants' views regarding the community participation process will be analysed in the following Theme. These Themes are intrinsically linked as the processes, as explained in Theme A1, affect the outcome of community participation (Theme A2) and vice versa.

6.2.2 Theme A2: Community Participation in IIA Practice

Community involvement is critical in the process of impact assessment. In addition to discussing the procedures for community engagement and involvement in the region, respondents also discussed the challenges and level of community participation in the impact assessment processes. The entire theme of community participation is further described below under the following headings: Perception of community participation, the process of community participation, level of community participation, challenges to community participation, advantages/disadvantages of community participation, and recommendations for improvement of community participation.

6.2.2.1 Perception of Community Participation

This heading addressed the participants' understanding of community participation, their perceptions, and areas of interest when carrying out community participation. Respondents showed an understanding of the need for community participation. However, their perception of the reason for community participation rests mainly on two standpoints: To pay off or compensate the community for using their land or resources and to satisfy the requirements needed for approval from regulators. The primary or significant need to reduce or mitigate environmental and health impacts often becomes secondary. Responses from both practitioners and community dwellers portrayed this line of thought. Respondent J10 stated that the main reason for carrying out community participation is because,

The participants' understanding of community participation, their perception, and areas of interest when community participation is carried out was addressed under this heading. Respondents showed understanding of the need for community participation. However, their perception of the reason for community participation rests mainly on two standpoints: To pay off or compensate the community for the usage of their land or resources and to satisfy the requirements needed for approval from regulators. The primary or major need of reducing or mitigating environmental and health impact often becomes secondary. Responses from both practitioners and community dwellers portrayed this line of thought. Respondent J10 stated that community participation is being carried out because,

if you do anything now. If you carry out any study..., without the evidence to show that you really consulted the community, the Federal Ministry of Environment, and the Department of Petroleum Resources (the regulatory bodies) will not approve such an EIA, ...as far as there is no evidence that ...the community were consulted.

The respondent further stated, "...for the fear of having your EIA rejected, communities are fully engaged now".

Respondent N14 expresses this viewpoint further by stating that "in most cases, in many cases, I must say, many project proponents only look at the legal aspect of EIA. They just want to fulfil the law by carrying out the EIA."

Respondent K11 mainly Justified the need for community involvement by stating that proper engagements allow "everybody to be carried along amongst community members", which "makes you face little or no crisis".

While this is an essential and cogent reason for community participation, it was interesting to observe that he put it across as the major and probably the most important reason for carrying out community participation.

All the community dwellers saw community participation as solely a means of giving socio-economic compensation to the community. Respondent C03, in his description of a community engagement exercise, asserted that "the focus was mainly on how to get the people involved to benefit from some 'propose packages' of alleviation like

employment for our youths and other gestures". The respondent further stated, "I did not follow up to see the final report to know if our inputs were incorporated. I would think that our inputs were incorporated in the report to the extent to which our inputs could go".

Respondent E05, for his part, asserted that companies embark on EIAs "mainly to negotiate with the community and know their problems so that there would not be any misunderstanding when the project starts".

6.2.2.2 The Process of Community Participation

Many respondents are of the view that community involvement should be holistic. That means the community should be involved in all stages of the EIA process. Respondent N14 stated that: "consultation with the community must begin from the conception of the project till the time that the project is operational or being implemented". The respondent further explained that "it is a vital aspect of the study: carrying the community along. Because the project's sustainability would depend on the level of community involvement".

Respondent P16 and many others explained the process in detail. Respondent J10 stated that the community involvement process starts by formally informing the stakeholders before any engagement. Similarly, Respondent P16 stated, "The community will be informed about the project... there would be thorough consultations, informing them about the fieldwork and the field studies." Respondent H08 also stated that practitioners commonly say, "That consultation is an ongoing process. It's the first step and continues all through the EIA process."

They all agreed that the consultation process would be ongoing through the various stages of the EIA study. Most practitioners explained (what they called) the "ideal way" of carrying out community engagements. They also stressed that "other players" in the field may not be playing by the rules. They highlighted some standard practices that do not meet the required standard. Some of their inputs on this would be covered under the challenges of community participation.

From their explanations, the various stages and means through which the community dwellers are consulted could be summarised as follows:

- a) A formal letter of introduction to inform the community of the proposed project and introduce all parties or persons involved. This is often written to the officially recognised community leader or leaders. Respondent P16 reiterated that "the community will be informed about the project" before a thorough consultation process commences.

Respondent H08 states: "The first thing to do after conceiving a project is to go and meet the community dwellers and inform them that you want to site a project in their community or the surrounding environment that will impact them".

- b) Formal letter of information and introduction informing them of the proposed impact assessment and the parties involved. Respondent N14 advocated an early involvement of community dwellers. The respondent stated that:

We always ensure that we create sufficient awareness. Rightly, even before we move in to gather the baseline data, we create a forum—we call it a public forum—where the project and its likely impacts—positive and negative—will be highlighted. Then, we get the community to buy into that project before moving into the study.

- c) Delegated members are invited to give input during the scoping meetings, which will draw up the scope and draft the TOR for the upcoming impact assessment. Respondent M13 highlighted the fact that they could not visit any site without informing the community and stressed that:

It starts with the scoping workshop, where participants are invited to a central location to contribute to the scoping process. Once the TOR is set up, we can then enter the field.

- d) Consultation with delegated leaders to inform them of proposed fieldwork, site visits, data collection and community engagements. Respondent J10 stressed the need for prior notice by stating that:

... we have to give the community and other stakeholders prior information that we are coming to their community in three or four days for them to get ready for us.

Respondent F06 also recommended this by stating: "what we do most times is, we always have a preliminary visit before we go out to meet with them, because most times, you cannot have one general framework for all communities".

- e) Ensuring that information for any field work is adequately announced and circulated amongst community dwellers to ensure full participation. Most respondents

stressed the need for adequate publicity. Respondent J10 expressed that some community leaders may want to hoard information to exclude their opponents. Respondent O15 also emphasised the need to ensure that information is shared correctly. He referred to instances where some leaders were greedy and wanted contractors to only deal with them. The respondent stated:

We have greedy people amongst the leadership...some community leaders do not want the people to have a say in what is coming; therefore, they will tell practitioners carrying out the impact assessment: you do not worry; you do not need to come to our community; you can come to my house; I will gather people in my house.

He explained that they do this to stop others from knowing about the impact assessment so that they would influence any financial compensation that may come with it.

- f) Engaging some community members during fieldwork as field assistants who could also assist as tour guides. They may also be assigned some duties that are not too technical or too professional in order to carry them along while sampling. Respondent P16 highlighted this by stating that:

the community people can also join the team as field assistants, ... assist in the team as tour guides, and may be assigned any duty that is not technical or too professional.

Respondent K11 also expressed the same view by stating that "even amongst your team, you need to incorporate the community members to work as part of your team as this will enable other members of the community to trust and accept you".

The respondent further explained that if there is any altercation or conflict in the field, the aggressors will not do any harm "when they see their community member as one of your team members, carrying you around as a guide".

- g) Engaging community members in focussed group discussions, key informant interviews, or surveys: This involves taking attendance, pictures, and other documentation and ensuring that the community members are entirely part of the process. All data generated is documented at this stage and subsequently analysed

during impact evaluation before the draft report is produced. Respondent P16 went ahead to state that:

During sampling, we engage the community in focused group discussions, interviews, key personnel interviews, or questionnaire interviews. We take attendance and take pictures, so they are entirely part of the process.

Respondent O15 further highlighted their engagement with the community by stating that:

We go to the field to get our data. The social impact and the health assessors will go to the community to assess the people, ... check the health data of the people at the community health centres, ...take some health measurements... look at the structure of the leadership of the community ... check the fluctuations in prices etc. We engage the community to collect the baseline data.

Other respondents iterated that they engage the community in various ways to generate data. Respondent N14 explained this as captured under the "Data Gathering process" in Theme A1.

After data collation, the consultants and practitioners return to their labs and study groups to analyse and produce their reports. According to most respondents, presenting the draft report is another stage where community engagement is necessary.

- h) Informing the community dwellers when the draft report is completed and ready for public review and notifying them (in advance) of the places or avenues of publication (these include newspapers, radios, and public displays in designated areas). The regulators require that the report be publicly displayed and scrutinised within a stipulated period. Respondent P16 mentioned 22 to 27 days, while Respondent J10, K11, and O15 mentioned about 21 days. Most respondents stated that 21 days is required for public review. The Nigerian EIA decree No. 86 of 1996 recommends at least 21 days for public display. Respondent J10 explained this process thus:

As soon as the report is completed, the EIA document is displayed in the respective local government headquarters involved, where the stakeholders and community members read, critique, or confirm their satisfaction. The document is displayed for about 21 days.

Respondent M13 expressed a setback to the public display exercise. He stated that:

the only area the community is lacking behind is when the reports are prepared and displayed, ... they rarely go to read. Possibly because of hunger or poverty and all that.

He further explained that their lack of engagement at this stage is a setback to the entire process.

- i) Constituting a public forum and informing the community about the date and time for the public review. Educating the community dwellers on their need to participate or be represented. Most respondents emphasised the need for the community to be represented at such fora. They stressed that it is needed to harmonise the inputs from the public. Respondent P16 stressed that:

at the public forum, the fears of the community, individuals, or groups would be raised, the consultants would be available to respond to questions, and the project proponents, the government agencies, and the regulators would also respond.

The respondent further stated that "the public forum precedes the final approval of the EIA. Therefore, any concerns, issues, or fears raised at the public forum would be considered".

6.2.2.3 Levels of Community Participation:

Although all the respondents who participated as "community dwellers" have shown a good level of awareness of the EIA process, they believed that the community participation process is ineffective and sometimes highly compromised. Of particular concern was the community participation process for the reviewed EIA report: The FUIO EIA report. Four respondents (respondents A01, B02, C03 and D04) amongst the community dwellers stated that there was no community engagement at all and that the communities were never informed that there was any EIA being carried out. Respondents B02 stated that:

I have participated in other impact assessments but not the one for the University. In fact, I will tell you that, as a community leader, at the start of the

University, I was even involved in the earlier construction of the first structures of the University as an indigene of Otuoke. However, we as a community, even me as an individual, have not heard of it, and I did not know whether that has been done. Maybe they did it, but not to the knowledge of the community.

Respondent C03 categorically stated, "I did not participate in that impact assessment. Not at all. Yes, I am from Otuoke, but I don't have any knowledge about it."

Similarly, respondent D04 emphasised that he did not know about the said EIA and explained that he and most people in the community were involved in erecting most of the take-off buildings within the University. He stated: "If there had been an impact assessment, I would have been aware."

One community dweller (A01) responded that although he did not partake in the EIA and did not know much about it, he overheard a discussion about it from the management of the University at that time. His explanation of the process was as follows:

There was no proper brief concerning it, ... there was no proper interaction with the management of the university concerning the environmental impact assessment. But it was more or less a kind of introductory section where there were no many questions, where the management only say somethings concerning the EIA. There were no proper questioning and feedback to the people. So, people really didn't understand what was done then. I don't know if there were a few people in management that might have had more information, but it wasn't a properly publicised exercise. There were no public consultations.

Only one respondent (Respondent E05), who claimed to have worked as the head of personnel to the local council at that time, accepted to have had adequate knowledge of the EIA. He stated that: "the impact assessment as at when the university was established, was not focussed on the human resources in the university, ... the committee per se was very passive".

The respondent further explained that the consultation process was non-existent or inadequate. He explained that: "They only met certain people, like the chief and other

people, but the basic people who were impacted were not contacted...even the land donors, about 7 families that donated their land and those who were farming in that area were not contacted."

He faulted the process and stated that the community and the landowners are currently litigating for damages and loss of livelihood. To summarise the process, he stated that: "they only called the paramount ruler of the community and a few people who were members of the council of chiefs... When they wanted to present their report, we were called to one hotel in Yenagoa, and people were just settled".

Only one respondent (L12) who responded as an EIA practitioner was involved in the EIA report for the University. He was not the consultant but was involved in the process as a stakeholder within the University interested in impact assessment. He described the process as adequate when asked if there was enough consultation for the EIA in question. He stated: "I will use the word moderate". He later stressed that there is much corruption in the process as the recommendations for provisions of specific amenities like health facilities for the University have not been implemented.

Other respondents who talked about the level of community participation were the EIA practitioners. They all stated that the impact assessment they participate in carries out adequate community participation. However, some of them stressed that the process is compromised in some cases. Respondent

F06 explained that there are cases where practitioners do not follow the correct standard. He explained that:

we have had ... situations where people sit down somewhere and fabricate data or pick up some work done before and maybe put some information into it and produce a report. I have heard that ...where people would just do desktop study instead of going to the field ... they pick up existing reports, probably the one with close attributes to the one they want to study, and just manipulate all kinds of data and produce fictitious results.

Respondent G07, on the other hand, expressed dissatisfaction with the level of sincerity amongst proponents of projects. He stated that:

EIA is required, but sometimes, I can tell you that communities are not adequately carried along except perhaps, like I said, for projects that are funded by donor agencies like the World Bank, the African Development Bank, etc. because those ones will require all that evidence.

He explained that proponents of projects would want to look for loopholes to undermine the process and save money, except in cases where the donor agencies funding the contract demand verifiable evidence of community involvement. He went ahead and criticised the level of disclosure. He stated that "our level of disclosure is still something that we will need to do something about. That is disclosing the project and eliciting comments and inputs from the community".

Although Respondent I09 stated that the community participation rate is very high, he also expressed that "most of the projects here are usually carried out before the assessment".

He recommended closing the communication gap and conducting "consultations before the actual project commences." This raises questions about the quality of consultation.

In summary, ten practitioners adjudged the level of community participation to be adequate or very high. In contrast, one practitioner classified it as inadequate unless in cases where donor agencies sponsor projects. All the participants accepted the prevalence of bad practices, corruption, insincerity amongst practitioners and project proponents, and outright forgery and presentation of fictitious data. They, however, claimed that they always adhere to best practices. One of the respondents (F06) narrated an incident where he was approached and asked to cooperate by altering data and presenting a favourable report. In contrast, another respondent (G07) stated that there are cases where his payments (consultancy fees) have been halted because he refused to be compromised.

6.2.2.4 Challenges to Community Participation

The respondents highlighted some challenges they encountered during community engagement. Most of the challenges were previously highlighted under Theme A1 when challenges to impact assessment processes were addressed. The significant

challenges to community participation identified by respondents include insecurity, low level of education and lack of human and financial capital resources. Other identified challenges include the increasing culture of political interference, short project timeframe, and cultural practices. Most respondents also identified corruption, insincerity and the lack of trust due to a long history of non-implementation of agreed mitigations as significant challenges.

Respondents prominently highlighted the lack of sufficient human capital and finance. Respondent J10 identified the lack of sufficient logistics support as a significant challenge. The respondent stated: "The challenges we often get while in the field, particularly in the riverine areas, are logistic.... It is costly to hire a boat, engine boat, in the riverine areas because of the terrain". He added that the peculiarity of the region makes the task of managing the entire process more cumbersome. However, Respondent 10 added that such challenges could be sorted with adequate planning. He added: "The moment you make the proper planning and arrangement ... the consultants may not necessarily stay long in the field. When you get all this logistics down ...the consultants would go there and do their job".

Respondent N14 stated that a lack of resources could be a major hindrance to community participation. The respondent explained that "the exercise is capital intensive as it involves organising public forums and other engagements..., so if the project proponent does not release sufficient funds for that exercise to be carried out, it could pose a challenge."

Most respondents reckoned that since the supply of funds is not inexhaustible, the increasing cost of community engagement, coupled with the overall cost of the EIA, could pose a major challenge. Respondent J10 further stated that "the contracted companies might be financially constrained because, if we have about ten or twelve communities to cover, it involves a huge sum of money as each trip is very expensive."

Insecurity was another major challenge that respondents highlighted. The Nigerian Niger Delta Region is noted for its incessant cases of restiveness. Most respondents who highlighted this fact explained that it is often a significant challenge to community participation. Respondent N14 illustrated a typical scenario where community elders had a chieftaincy/headship tussle. The respondent had this to say:

The moment you identify with one sect, the other sect regards you as the enemy. So, they are reluctant to partake or provide the right information.

Respondent I09 emphasised that insecurity and conflicts have been a significant issue because "at the end of the day, you cannot or are not meeting the right set of people because of conflicts, community conflicts and similar issues".

Respondent A01 also considered insecurity within the region as a significant hindrance to community participation. The respondent explained his point by saying:

We are also facing security traits, ... minor thefts, burglaries, kidnappings, etc. These things put people at risk and do not allow them to fully participate when they are called to do so.

Similarly, respondent F06 added: " Some community dwellers advise us not to go to certain communities because of the security situation in those riverine communities."

Another major challenge is the politicisation of the impact assessment process. Respondent F06 expressed regret that the process of community participation and community interest has significantly been politicised. The respondent stated that:

Some of those local people politicise these issues. For instance, if it was a project, maybe a government project, ...and they may not be on good political terms with some of the key members of society who have found themselves in the political space, they will put political pressure on and try to hinder the exercise.

All the practitioners interviewed cited a lack of adequate education as a significant hindrance to community participation. Respondent D04 explained that some community dwellers shy away from such interactions but are only interested in getting money. He expounded that:

When it comes to issues like this, community members shy away from participation, and some who get involved are just interested in collecting a little money, only to lose interest after they are given some money. This may be because of their level of education. Some people (some of those whose

educational status is low) seem to shy away because they think they may not contribute much.

Respondent G07 illustrated a scenario where people do not fully understand their right to compensation. The respondent attributed this to inadequate education and explained that practitioners should inform and educate the people about all available options for compensation. Respondent J10 also expounded this fact by stating that:

The educational level, particularly in the riverine area, is very low. Most of them are after their immediate benefit, mainly money. But in their midst, you also have the educated ones who would also try to caution their community members and explain to them that they stand to gain in the future.

Respondent H08 acknowledged that a low level of education could be a hindrance but was quick to add that the community dwellers "would always identify somebody who can represent the group on behalf of those people who are illiterate or who may not understand. Most times, maybe the schoolteacher in the community."

The challenge that "low level of education" poses could also be observed from the way respondents follow up the process and their primary drive towards participation. Respondent D04 (a community dweller) accepted to have a good level of awareness of the EIA process and a good understanding of its goals but could not follow the process to a logical conclusion. He stated: "I did not follow up to see the final report and to know what was included". It could be extrapolated that he stopped at community engagements where stipends were shared. Similarly, Respondent C03 stated:

... The focus was mainly on how to get the people involved to benefit from some proposed packages of alleviation like employment for our youths and other gestures.

Practitioners linked this lack of focus (on alleviating proposed impacts) to a lack of understanding of their severity and consequences, which in turn is attributed to a lack of or poor level of education.

The lack of an **adequate timeframe** for impact assessment is another significant challenge for IIA practice. Respondents reiterated the need for adherence to the

proper timeframe for EIA practice. Respondent I09 explained that although they are adopting a prospective and comprehensive/holistic approach to EIA practice in the region. The respondent stated that "most of the construction ... most of the projects are usually carried out before the assessment" and further explained that "this undermines the community engagement process as consultants can no longer obtain baseline data from the undisturbed environment". Respondent 09 recommended that communities be informed in good time, and consultations should be carried out before the project commences.

As explained earlier, respondent G07 illustrated the constraint he had when a state contract was awarded, with a delivery timeframe that could not accommodate a comprehensive impact assessment. He explained that such actions are rampant in the region and can affect the level of community engagement as well as the overall quality of the final report.

Corruption/Insincerity is another major challenge identified by respondents. Most respondents highlighted cases where standard practices were not followed. They claimed that such cases were rampant amongst other practitioners. These identified malpractices are mostly related to community engagements. A case in point is the FUIO EIA report reviewed in study 3. Most community dwellers claimed that community engagements were not carried out at all. One respondent who agreed to have any knowledge of the process stated that it was formalised in a secluded hotel in the city, and only a select number of people were sorted. Respondent E05 expressed his dismay at such acts and stated that the few community leaders involved "were focussed on profiteering, embezzling money meant for the community and not carrying every community member along, especially those whose land and economic activities were directly affected".

The respondent further explained that part of the money allocated by the federal government for landowners' compensation was misappropriated, and the landowners were not paid for their economic trees. The respondent explained this by giving the figures as follows:

The actual money that came to the community was 70 million naira; however, the money the state government approved for compensation was 152 million.

Also, the area on paper was about 200 hectares of land, but recently, they said that the actual size is about 190 hectares of land that the state government acquired for the federal University. So, there were a lot of fraudulent activities going on underground.

Similarly, although the EIA Act requires detailed and verifiable evidence of engagements, Respondent G07 stated that "these things (evidence of community engagement) could be stage-managed." Similarly, Respondent I09 categorically stated, "Many community leaders are not sincere to their followers, and it normally creates many issues." Respondent O15 posited that "one of the major obstacles is greed amongst the leadership."

Respondent K11 identified leadership as one of the "key obstacles of community involvement" and explained a scenario where some leaders would live in the city and collect money meant for the community without going or visiting the community. Respondent G07 questioned the effectiveness of the consultations done by most practitioners. The respondent posited that the practitioners should adequately educate the community dwellers by giving them all relevant information about the project and explaining all the options available to them to make informed decisions. The respondent also expressed discontent with a situation where people are taken advantage of because they are ignorant of their rights. In his analogy, Respondent G07 stated:

Yes, you can ask a poor person, and he makes fewer demands because he does not know he can get more than that or he does not know the worth of what he is giving away. So, explaining his right to him... people do not take the time to do it because it is laborious.

Summarily, Respondent G07 explained that "meeting the legal requirement is one thing, but doing the right thing is another".

Respondent E04 echoed this view by stating that "they (the consultants and project proponents) should be more genuine and sincere in their dealings and not just try to get their approval."

Respondent K11 also highlighted insincerity on the part of the community dwellers. He explained that due to the prevalence of major oil-related developmental activities in the region and its attendant environmental effect, the community dwellers, in most cases, have experienced many past EIAs. He stated that:

In most cases, the community dwellers may think a new project is linked to a former company. So, ...many of them would have been taught or given ideas of responses they should give. So, when you ask them a question, they would blame it all on the company thereby giving misguided responses.

Cultural practices are also relevant to IIA practice in the region. Most respondents iterated the role of customs and tradition in how community dwellers approach community engagements. Respondent O15 expressed his view by explaining that:

Some of the challenges are related to our culture. An example is the culture that women do not talk when men are talking, or women do not come to where men are". Most times, because they are always in the shadows when you ask them about the things they need for the women folks, they say what the male folks want them to say, such as...I want a job for my husband. They do not have a say on their own. So, I think that is more cultural.

Respondent F06 illustrated their experience with the culture of the community they work with, stating that the community had a sacred river that no woman or stranger could enter. The respondent explained that such beliefs can hinder the ability to gather samples and result in conflict if violated. Respondent K11 added that some cultural beliefs can sow mistrust among community dwellers. Respondent K11 further narrated an instance where physical health data collected from community members to build up the baseline data led to some community members rumouring that the practitioners were gathering samples and data for ritual purposes. The respondent stated that "their cultural beliefs enable some people to come up with a campaign that we were collecting samples for rituals" and likened the experience to the current rumours, myths, and conspiracy theories about covid 19.

The **long history of non-implementation of recommended mitigations** is also a major identified challenge to community participation. Respondent G07 related the

reluctance of community dwellers to the history of non-implementation of previously completed EIAs. The respondent explained that:

The reason communities may still be reluctant to get involved in some of these studies is the non-implementation of the MOU and, again, the non-implementation of requests. Some of the community's needs and expectations have not always been met.

Respondent M13 quickly responded to the prompt on challenges of community participation by stating: "I can give you a very quick one, which is that expectations have not been met". To further buttress his point, the respondent stressed that "regulators are complicit" as they are not adequately monitoring the process. Respondent M13 illustrated his assertion by having this to say:

Apart from young ones who are paid to escort practitioners to the site, people are becoming less interested. They often ask themselves what they are gaining from it. Except for the few NGOs or those who are interested in making money out of the whole process, people are no longer interested because of failed expectations.

Respondent J10 emphasised the role of non-implementation of past reports as a major discouragement for community dwellers. To elaborate on his views, the respondent stated that "although there are prospects, community dwellers are sometimes reluctant to be involved because of non-implementation... their needs and expectations have not been met."

6.2.2.5 Recommendations for Improvement

The respondents believe that community participation needs to be improved. Respondent G07 acknowledged this by stating: "I will tell you that we have more work to do in that area". The respondent recommended revising the process for publication of draft reports and further suggested that the reports should be displayed at the community level. Such display would allow community dwellers to easily have access, in contrast to the current practice of displaying the reports only at the local government secretariat. To support his point, respondent G07 had this to say:

Community members have consistently requested that the draft report be made available at the community level and displayed at the Ministry of Environment and local government secretariats.

Respondent A01 advocated "the need for further impact assessment orientation". In consolidating his suggestion, the respondent stated that:

The engagement process should be contiguous throughout the project's lifespan. Regarding the University, further community and university engagements concerning the environmental impacts are always needed.

Respondent B02 called for "more sincerity on the part of the government and the proponents of Projects". He emphasised that the government should:

ensure they are sincere in involving the community. They should ensure that community engagements are carried out and appropriately monitored and the consultants go to the villages to interact with the people. People who embark on wrong practices should be punished.

Similarly, Respondents C03 and D04 advocated more sincerity as a panacea for future improvement. Respondent C03 had this to say:

My recommendation for improvement would be to call for the timely execution of projects. The implementation of recommendations should follow this. I also call for the sincerity of all stakeholders.

Respondents D04 and E05 also emphasised the need to reform the community participation approach. They stated that emphasis should be on the quality of engagement rather than "formalising" it. Respondent E05 explained that "all stakeholders should be consulted, not just a few community leaders who largely stay in cities outside the local community and who do not have anything to lose". He further recommended the need for "post-impact assessment briefings or engagements."

Most practitioners emphasised that improving the consultation process is paramount to improving the overall engagement quality. Respondent I09 stated that "consultation

is paramount", while respondent H08 suggested that "once consultation is properly done, the entire process becomes a seamless smooth process".

All the practitioners recommended that the consultation process be holistic, whereby every community member would be adequately carried along or represented. Respondent N14 reiterated this by stating that:

The regulatory agencies typically insist that consultants carry out adequate and comprehensive consultations with all community segments: the elders, the youth, and the women. Every major stakeholder, anybody who will have one level of impact or the other, must always be involved in the EIA study." We have this requirement on paper; we must make it count in practice.

Respondent K11 stated that impact assessment studies should be accompanied by more education, enlightenment, and awareness about the need for all to participate. The respondent further stressed that he advocates for a "town hall-like engagement" where everybody is represented.

In concluding the discussions on community engagement, the respondents identified the benefits of proper community engagement to the EIA process and the success of the proposed project. Most of them agreed to the opinion, as quoted from respondent K11, that "a good engagement process would help to establish peace and harmony amongst all the parties." This, they reasoned, would ultimately ensure the smooth construction and operation of proposed projects. Some acknowledged that it would help enrich the data, which may help identify more health-related impacts.

6.2.2.6 Theme (A2) Summary and Relationship with other Themes

Community participation cuts across most components of the IIA practice. It is closely linked with other components of the IIA practice. Its success can significantly influence the outcome and level of health coverage in the final IIA practice. The next theme will focus on health coverage and how health impacts are covered in IIAs within the region.

6.2.3 Theme A3: Health Coverage in IIA Practice:

This research is driven by the researcher's interest in understanding how health issues are covered in impact assessment in the Nigerian Niger Delta region. This theme provides an overview of respondents' views on health coverage in the impact assessment processes. Details of their responses under this theme are discussed below under the following headings: level of coverage, the processes of health integration, challenges, conflicts of interest and prospects.

6.2.3.1 Level of Health Coverage:

Most community dwellers believed health impacts needed to be adequately covered in impact assessments. They based their response on the experience with the FOU Otuoke EIA report. Respondents A01 stated that:

The entire assessment process was not done correctly, so health impacts were not adequately covered. However, it was just a general error in the entire process, as the people involved did not go through all the community participation and awareness processes. I would not say it was a bias against a particular impact but a general process error. Even if the report is well presented, it becomes useless when the people are uninvolved and cannot demand its implementation.

Respondent B02 reiterated that the EIA was not done correctly and that they were unaware of it. He summarised that most companies are not open to conducting proper health assessments and informing the communities of their right to give inputs. The respondent explained that:

When companies come, they always conceal that area. They know we are novices in such things, so they will never tell us anything about it. Even though they did the report, like you said, the University did it, but it was not made known to the community ...

Respondents C03, D04, and E05 all gave similar responses about the FOU Otuoke EIA report. In expressing his views, respondent E05 stated that:

Arguably, the project negatively impacted the citizens' health. This is because the impact assessment process that would have evaluated all these impacts was improperly done. Health facilities were not put in place to meet the expected influx of people, and the money that would have totally revamped the community and the school environment was misappropriated.

Respondent D04 further narrated his experience with another EIA that he participated in as a community participant. He stated that the practitioners in that regard "tried to gather people for that very day to collect data." He further stated that:

They listened and collected their data. In my opinion, health impacts were covered as much as other impacts, as they asked questions about health issues. Although they gave some money to families affected by the pipeline after the assessment, the project has not taken off.

Respondent C03 further narrated his experience with another EIA and stated that:

Health is one of society's critical issues, so there is no way that a reputable organisation... will carry out an EIA without mentioning health. So, health was mentioned to the extent that activities to be carried out in the pack must follow specific health guidelines.

He further described some of the health-related issues discussed, including the use of PPEs and other potential health hazards that could emanate from project activities and their possible mitigation approaches. He declined to assess the level of health coverage in qualitative terms but stated that it was just in line with how other impacts were covered.

Respondent E05 referenced the FUI Otuoke EIA report in his response to the level of health coverage. He stated that:

The few health facilities within the community are stretched, and the old and outdated healthcare facilities jointly established by the local and state governments sustain the community. A proper evaluation of all impacts, including health impacts, was not carried out.

He summarised by stating:

No, health impacts are not adequately covered. They produced a report based on literature without really interacting with community members. How would such a report address real health impacts on the ground?

The impact assessment practitioners were more optimistic about the level of health coverage in impact assessments. Although many of them highlighted some challenges and sharp practices that may affect the overall quality of the impact assessment report, they stated that health is mostly adequately covered in their assessments. Respondent F06 explained that:

health impacts are usually adequately covered. ... over time, experience and especially field experience, counts a lot. To your surprise, we might have times when...clients or a sponsor wants to find a way to circumvent; it is now left for you as an individual ... to make sure that you define everything correctly and that they have to be done in the way they should be done.

He emphasised the need for follow-ups and process monitoring to ensure all parties do the right things. On his part, he summarised that "we try to cover all areas and make sure we follow the standards as designed for each of those engagements".

Respondent G07 summarily puts it that "health is adequately covered." He further explained that the areas to be covered in each EIA are set up during the scoping stage, and the level of coverage will depend on the team's experience. He stated that:

In Nigeria, on average, some projects may escape with minimal treatment of each of these impacts and still get approved. But on an average scale of 10, I will take 8. That is to say that they are adequately covered.

Respondent H08 emphasised the importance of having experienced contributors and consultants. He stated that:

It is a function of how good the expert in that field is...if it is somebody who has done the same thing over and over again, he will know what to look out for and what is expected in the report.

Respondent H08 further stated that:

For the ones I have been involved in, we usually go with experts, and experts always give good coverage of impacts. Once that is done, you will get a good report, and my experience shows that we have had good coverage of the health impacts most of the time.

Respondent I09 expressed some reservations when addressing the level of coverage. He stated: "Yes, health is covered, and to some extent, I have a little reservation on whether health impact is adequately covered". He further explained:

In most cases, ... by the time you consult the stakeholders, their concern is usually based on 'how this project will affect my health or what benefit this project will bring to the community'. That makes the socio-economic and health impacts a more relevant component of any assessment study.

Respondent I09 reiterated his point by stating that health coverage varies with the nature of the project, the expected outcome, and the quality of experts involved. He sums it up by stating that health and socio-economic issues are always highly considered "because they affect humans... and are usually an aspect where the community, where most of the stakeholders are concerned, and where you have direct contact with the community".

Respondent J10 believed that the importance of health and social components in EIA was not always emphasised in the past. He stated, "In Nigeria here, it is just recently that we begin to realise the importance of health and social impacts in Impact assessments. Otherwise, before now, it has been neglected". Respondent J10 further elaborated on this by stating that:

In practice, the EIA's environmental component is regarded as being more critical than the HIA and SIA. However, the regulatory bodies, consultants and stakeholders have recently realised the crucial impact of the HIA and SIA components. They are gradually advocating that it should be celebrated because the main essence of environmental impact assessment is the people and their health, hence the importance attached to it just recently.

The respondent further stated that he is currently engaging in community consultations in Niger Delta Communities, and from his experience, "all communities involved (about four of them) ... lay more emphasis on health Impacts of proposed projects and the existing projects around them". He summarised by stating that there are no biases in coverage of health impacts, although there may be systemic biases based on finance allocation and the fact that the sector is dominated by experts who are more environmentally inclined. He summed it up by stating that impact coverage "actually depends on the company and stakeholders involved". He explained this by narrating what he termed - excellent community relations and impact coverage by ENERGIA.

Respondent K11 expressly stated that health issues are "adequately covered" in the EIA with which he has been involved. He stated: "I do not agree that there is an unconscious bias from having more specialists, consulting firms, and companies that are mainly environmentally and biophysically inclined than health sector specialists". The respondent further stated that "the commitment depends on the capacity and the category of the company" and explained that the same principle holds for the level of implementation of recommendations.

Respondent L12 also expresses that health issues are covered adequately in the ones in which he participates. He stated that "the impact assessment processes highlight all the health issues and adequately cover it" and further emphasised the importance of the health component of environmental impact assessment. To buttress his point, he had this to say:

Well! health impact assessment is an essential aspect of impact assessment because whatever we do in the environment, the end users are human beings and animals.

Respondent M13 reiterated the earlier opinion by respondent J10 that health impacts were not always emphasised in the past. He (Respondent M13) stated that: "because of how EIA originated in Nigeria, not much emphasis was given to the health aspect, until later when some professionals realised and said no, ... so health became a stand-alone aspect of the EIA". He further elaborated on the level of health coverage by stating that:

The truth ... is that even as important as health and social impacts are, those at the elms of affairs are more biophysically biased. I may be biased here, but I think not enough emphasis is placed on social and health impacts, particularly with oil and gas and petroleum projects. DPR is the worst; their attention to social and health impacts is low.

Respondent M13 posited that there is a need for improvement in the level of interest given to the health component and summarised his views by stating:

We need to give more emphasis to... the health and social aspects. Because of the low emphasis on these aspects, the money allocated for their studies is often far below that allocated for the biophysical aspects.

Respondent N14 also emphasised the importance of the health component of EIA. He stated, "There will hardly be a project that will not impact the health of people living around that area". He expressed the view that there are some challenges to adequate health coverage. He subsequently identified the lack of "health records" and "standardised healthcare facilities" as some of the factors hindering health coverage. He explained that there are no intentional biases in the level of coverage but attributed what he described as a 'low level of coverage' to the case-by-case challenges in the field. He stated that:

If there are biases in the coverage of specific impacts, it could be because of their challenges in the field, not because they do not want to process the information. It could be because they cannot gather sufficient data to predict the impact, not because they are unwilling to do so.

Respondent O15 assessed health coverage based on his experience working with his company. He stated, "From my point of view, ...working with a company that sets the standard, I think health is well covered. But, you know, the problem we have in this part of the world is still enforcement and regulation". He further admitted that other practitioners may not comply with the required standards. The respondent expressed this view by saying:

We have seen a lot of sharp practices around. We have seen some companies and organisations not even going to the site to talk to people to get the data. ...So, from my point of view, because of how we set our standards, I can say the coverage is fair enough... but when we look at the general performance, just about two out of five are doing the right thing. So, it is still low. However, I can give ten over ten to my company. But when you look at what others are

Table 6.3. presents a summary of respondents' views on the level of coverage of health impacts in integrated impact assessment documents in the region.

Table 6.3: Level of Health Impact Coverage - Respondents Views

| Respondent | LEVEL OF COVERAGE | QUOTE/ REMARK |
|-------------------|---|---|
| A01 | Not adequate | "The entire process of conducting the assessment was not properly done. So, from the standpoint of health impacts, I would say that they were not adequately covered." |
| B02 | Not adequate | "In fact, when companies come, they will always conceal that area. They know that we are novices to such things, so they will never tell us anything about it. So, health impact, like other impacts, were not properly covered." |
| C03 | Not adequate | "For the Otuoke University EIA, I understand that the EIA was not open to the people; I would not think Health issues and other impacts were, therefore, adequately covered". "Health is a critical issue in any society. A reputable organisation would not carry out an EIA without mentioning health, so health was mentioned in the other EIA I was involved in." |
| D04 | Not adequate for FUU Otuoke, but adequate for another EIA | "I would say that health impacts would be covered as much as other impacts as they had asked questions about health issues. The problem is that the system is corrupt". |
| E05 | Not adequate | "Arguably, the project negatively impacted the health of the citizens. This is because the impact assessment process that would have evaluated all these impacts was improperly done. Health facilities were not put in place to measure up with the expected influx of people, and the money that would have revamped the community and the school environment was misappropriated." |
| F06 | Adequately covered | "Health impacts are usually adequately covered. Over time, experience, especially field experience, counts a lot. To your surprise, we might have times when...clients or a sponsor wants to find a way to circumvent. It is now left for you as an individual |

| | | |
|------------|---|---|
| | | ... to make sure that you define everything properly and that they have to be done in the way they should be done." |
| G07 | Adequately covered | "In Nigeria, on average, some projects may escape with minimal treatment of each of these impacts and still get approved. However, on a scale of 10, I will take 8. That is to say that they are properly covered." |
| H08 | Adequately covered | "For the ones I have been involved in, most times we go with experts, and experts will always give you good coverage of impacts and once that is done, you'll now get a good report, and my experience shows that most times, we've had good coverage of the health impacts". |
| I09 | not adequately covered | "Yes, health is covered, and to some extent, I have a little reservation on whether health impact is adequately covered". |
| J10 | Adequately covered in recent times | "In Nigeria here, it is just recently that we begin to realise the importance of health impacts as well as social impacts in Impact assessments. Otherwise, before now, it has been neglected". |
| K11 | Adequately covered | health issues are "adequately covered. ...I am not totally convinced that there is an unconscious bias ... the commitment depends on the company's capacity and category. |
| L12 | Adequately covered | the impact assessment processes highlight all the health issues and adequately cover them... definitely". |
| M13 | Adequately covered but not enough emphasis. | "The truth ... is that even as important as health and social impacts are, those at the elms of affairs are more biophysical biased. I may be biased here, but I think that not enough emphasis is placed on social and health impacts, particularly with projects in the oil and gas and petroleum industry. |
| N14 | Not Adequately covered | "There is 'low level of coverage'. "If there are biases in the coverage of certain impacts, it could be because of their challenges in the field, not because they do not want to process the information". |
| O15 | Adequately covered | "From my point of view, ...working with a company that sets standards, I think health is well covered. But, you know, the problem we have in this part of the world is still enforcement and regulation". |
| P16 | Adequately covered | "There is no conflict in the various components; in fact, there are distinct three components, So, yes, health is adequately covered". |

6.2.3.2 The Process of Health Integration

This subtheme was identified to help harmonise views on integrating health within the larger IIA or EIA. The community participants gave limited input to this theme. Their

limited input was because they were not mainly involved with the execution. Their views were limited to their experiences during community engagements. Most of them expressed displeasure at the levels of community engagement and did not particularly talk about the different components of EIA.

Respondent A01 highlighted the health impacts associated with the FUI as follows:

Many people now come into our community to live, study, and do business, which means there is more chance for communicable diseases to spread. Such diseases like HIV/AIDS or TB are more prevalent in our community now. There is also an increase in the rate of crime in the area. Our healthcare facilities are also more stretched.

The respondent's identification of these issues gives credence to the fact that, if community engagements are carried out correctly, community participants understand most impacts and can constructively propose mitigation measures.

Other community dwellers also iterated on the importance of health coverage and highlighted some health impacts that affect the community. Community dweller B02 explained that the location of the University in their community has impacted them in "many ways". He stated that,

More people have come into our community, and they may have brought many other diseases with them which pose more ...challenges to our small health facilities" It also has other negative impacts, such as, as a Nigerian society, the activities of cultists.

Respondent D04 also expressed a similar opinion as respondent B02 by identifying the burden created by the increased population on the health system and the possible increase in crime rate.

Respondent C03, in his response about the EIA he was involved with, stressed that,

Health is a critical issue in any society. There is no way a reputable organisation would carry out an EIA without mentioning health, so health was mentioned to

the extent that activities to be carried out in the pack must follow certain health guidelines.

He further mentioned the effects of dust and noise pollution from tractors and other heavy vehicles as examples of health impacts. According to him, "When the process is executed properly, health issues are covered, although the natural reason for participating is not mainly to identify health issues but to make immediate financial gains".

The practitioners explained the procedures and methods used to assess all impacts, including health impacts. They stressed that health issues are covered by a separate team of experts who work independently and make independent decisions. Information for assessing health impacts was obtained using approaches commonly used in participatory needs assessment. Common approaches include community mapping, household surveys, focus group discussions, and informal discussions with voluntary or community groups. Other approaches used to harness health impacts include interviews with key informants, documentary analysis of data from healthcare providers, and observations undertaken in homes and neighbourhoods.

Respondent P16 stated that data collection involves interacting with the community and collecting data through "focussed group discussions, interviews and key personnel interviews or questionnaires interviews". He explained that health impact coverage (like other impacts) should start from the project's onset (the screening and scoping stage) and proceed to community engagements and other field activities. In his explanation, respondent P16 stated that:

It depends on the lead consultant and the project proponents. The process should follow the various stages of the report, starting with the scoping process. The health people should be involved.

Respondent J10 stated that interest in health coverage has been gaining momentum lately. He stated that this is because "stakeholders are beginning to understand that the impacts from degradation of the environment are affecting their health". To highlight his point, the respondent stated thus:

They are now fully aware that health impacts should be part and parcel of EIA because everything they are doing borders on their health... Some of them will come and tell you that they have eyesight problems. Some of them will tell you that they have running stomachs from time to time, and others will tell you they have internal heat due to gas flaring ...and all sorts of ailments.

The respondent further explained that they use "various approaches to collect data from the field, then analyse and write reports". According to the respondents, the consensus surrounding the processes of health coverage includes the fact that health assessments and evaluations should be done by a separate team of experts who are uniquely experienced in the field. All the respondents explained similar approaches to data collection, which involved the use of approaches common in participatory needs assessment, as stated above. They also stated that the scope of health assessment mainly depends on the project involved but is mostly limited to issues that directly impact community health. Figure 6.3 illustrates the interplay between the health consultant's role and the data generation and management processes. He is actively involved in gathering and processing data through the various stages of the EIA process.



Figure 6.3: Interchange in Health Data Generation and Management

6.2.3.3 Challenges to Health Impacts Coverage

The respondents highlighted several factors that affect the adequate integration of health impacts in impact assessments. These challenges are harmonised in this sub-theme. The results for these challenges are presented in subheads that were inductively identified from the data. Some of the challenges are shared challenges that affect all aspects of the assessment process and are not limited to health impact

coverage. Some of these common challenges were explained earlier under the sub-theme: "challenges to community participation."

Misconceptions about what constitutes health impacts have been identified as a significant challenge for health impact assessment. The researcher observed that most practitioners with environmental backgrounds have certain misconceptions about what constitutes health impacts. Some practitioners who specialise in health assessments base their approach on addressing clinical healthcare issues without employing the core HIA approach of considering the broader determinants of health.

A case in point is the comment from respondent G07. In explaining where health impact assessment is necessary, the respondent stated, "If you are doing a road project, for instance, there is nothing you need about the health of the people as much..." He made the statement explaining that some projects require detailed HIA while others do not. The researcher observed that this comment feeds into the assumption that projects requiring detailed health impact directly affect the clinical component of human health while neglecting projects that may alter other components of the broader determinants of health.

Similarly, respondent H08 stated that:

The biophysical report now becomes critical for some projects located away from where people live, such as projects in the community forest. This is because you are dealing with the environment, and the project is far from where people live. However, suppose a project is located where people live, and it will emit gases or toxic substances that would affect the people. In that case, the health impact report becomes necessary.

The explanation above further feeds into the opinion earlier expressed. The researcher feels that the perception that a project in the community forest, far away from the community, will demand less health impact assessment is a misconception. This is because proponents of projects can use this notion to argue that their project does not require elaborate health impact assessment. A prevalent situation in the region is the issue of oil and gas leakages from pipelines located in very remote forests. Another example is the location of gas-flaring sites in remote forests. Gas

flaring is still common and predominantly practised in the region.

Another significant challenge for health coverage in the region is **the culture of prioritising environmental and social impacts over health impacts**. The impact assessment practice in Nigeria, just like many other regions of the world, started from the outcry for environmental protection. Respondent M13 stated that:

The focus was more or less on the biophysical because those who started it were ecologists. Most of them are retired now. They started from UI and Unilag, and as we progressed, impact assessment embraced ecological, social, and health components. At a point, it went from just EIA to ESIA and to ESHIA to let people know that it also includes health and socioeconomics.

The respondent further explained that the environmental component of the EIA (or integrated impact assessments as practice in Nigeria) becomes more prominent because other components came in later years.

Similarly, respondent O15 had this to say:

...So, you now see that the HIA is submerged to be a micro section in the SIA, which itself is a subsection of the EIA...In this part of the world, HIA is like a micro document put somewhere under the SIA.

To improve the situation, respondent J10 made a "suggestive plea" for legislative backing for the HIA and SIA components of the EIA. The respondent puts forward his suggestion this way:

Legislative backing is needed on HIA and SIA in terms of their coverage compared to other aspects of the EIA, although every EIA now must go with HIA because of its importance (i.e., as a regulator's requirement).

Community participants' culture, awareness and perception also feed into the existing culture of prioritising environmental impacts. Respondent O15 explained that community preferences may not really reflect the need to prioritise the health component of EIA. He stated that:

Majorly, from some of the projects, ... the rankings of what the community really wants show that health comes far below. These are things that affect EIA recommendations.

He further explained that:

If most of them said, for instance, that they don't want good healthcare facilities, that they are okay with their healthcare, or that they don't even go to all those places, ... it's most often a reflection of what the community wants.

Respondent N14 added his view on the area of community interest by stating that it "depends on the level of education and awareness." He recounted his experience of a particular project and stated that "when that project was submitted, the people were not interested in knowing the impact of that project on their health."

Imbalance in budgeting for various components of the impact assessment process is another identified challenge to health coverage. Some respondents expressed that budgeting for the entire impact assessment process always favours the environmental component instead of an equitable allocation formula. Respondent H08 espoused this viewpoint by stating that:

... there are sorts of biases in terms of what is being paid to the consultants, the reason being that if we complained, the consulting companies would claim that the biophysical aspect of EIA would have or will go for two seasons while that of SIA and HIA will go for a season...

Similarly, respondent J10 noted that:

So that is where the bias in terms of consulting fees comes in. Biophysical consultants are paid more than health and social consultants. And then again, when you talk about or when we are in the field, often, emphases are laid, preferences are made, and resources are allocated more to the biophysical aspect of the study than that of HIA and SIA.

He further stated categorically that "the bottom line is that, in terms of planning, resources allocation, and the rest of them, the biophysical aspect of the job is being accorded more resources than that of HIA and SIA".

Respondent M13 reiterated the "need to emphasise the social and health aspects." The respondent said, " Because of the low emphasis on these aspects, the money allocated for their studies is far below what is given to the biophysical...that is what we have been suffering from."

In his effort to justify why allocations for environmental impacts may be higher, respondent M13 further explained that more resources may not be outrightly allocated to any sector because of preference or biases. He stated that consultants independently submit their budgets, and resources allocated to each component may be influenced by the scope of work or the assumptions that health data are easy to generate. To clarify his point, he stated that:

Most of the time, there are no direct or conscious biases. However, because the health aspect is related to humans and data could easily be generated from people, they seem to allocate lower resources to that sector. So, I would say there is still much awareness to be created in that area to ensure that resources are allocated equitably.

The lack of an adequate health database is a major constraint to health impact coverage. All the practitioners expressed concern about the lack of adequate database materials. They stated that most of the rural communities do not have adequate health records as they do not have standard health centres or hospitals to preserve the records. Respondent J10 iterated that:

When you collect data about health impacts in the field, it becomes inadequate because the only questions you will ask and the answers you will get are from community members who, more or less, do not have adequate knowledge about health.

He further stated that:

In the core communities (the villages) of the Niger Delta, health data will be lacking because there are no health centres or hospitals in the communities, which is to tell you that at the end of the day, you might not have robust information or data to put up your report.

Similarly, respondent N14 explained that:

If you are going to examine a project's impact on people's health, you must first and foremost determine their current health status. You must establish good baseline data, which is where the challenge in health impact assessment normally comes in. Some communities do not have sufficient health facilities, and many people do not patronise existing facilities for there to be records.

He maintained that they "have been having the challenge of adequate information about the health status of the people". Respondent P16 raised a similar concern by stating that:

Before you can predict the project's impact, you must have gained an idea of the prevalence of certain diseases or challenges in that core population. So, the lack of adequate background data has been a significant challenge in the health impact assessment.

The level of expertise of participating health impact assessment practitioners also challenges health coverage in IIAs. Respondent N14 particularly pointed out the challenge of having experienced and well-trained experts in health impact assessment in the region. As stated earlier, EIA (without the health component) has a more extended practice history. The requirement for the mandatory inclusion of the health component burdens the availability of people with the right technical knowledge. Respondent N14 stated, "There is that challenge that one may have in getting the relevant hands, expertise, in different areas, for instance, in health and socioeconomics, as you move into the field".

Respondent H08 explained that the level and value of contributions from each team depend on the intellectual strength of the team. He stated that,

It is usually a function of the strength of the individual covering the section. So, when the biophysical person is more intellectually competent, he will make more inputs, making the results in that section more robust. The person who is weak intellectually or experience-wise would usually be the weak link in the report. So, it is much more than just being discriminatory. So, it is a function of the strength of the individual in the team.

6.2.3.4 Clashes of Interest in Impact Coverages: Focus on Health Coverage

Practitioners' views on possible clashes of interest between the three components were collated under this sub-theme. The researcher described possible biases and/or clashes to respondents as:

- a) The possibility of certain aspects (s) of the study (environment or social) conflicting with the other aspect(s) (e.g., health).
- b) The possibility of the process of assessing certain aspect(s) of the study conflicting with the process of assessing the other aspect(s)
- c) The practitioners may have preferences and/or biases for or against certain aspects of the study (environment, social, or health) because of their professional background.

Most respondents believed there were no biases in the coverage or clashes amongst the major components of the assessment process. Respondent K11 illustrated a scenario where assessing one component (e.g., social) can add value or further explain the assessment done within the other component (e.g., health). He used the illustration of assessing available infrastructure in a rural community in one of his EIA experiences to clarify his point. He explained that:

If, for instance, the socio-economic team would look at available infrastructures (which include higher education, health, cultural, and other infrastructures) in an environment, the health team would still look at health infrastructures and some social amenities. You can see that both are studying the same thing.

The respondent further explains that:

While the socio-economic team would just say that there is a family health centre in this community or in that environment or that there is one within 5km of the environment, ... the health team would find out the nature of the personnel available, the facilities/services available in that health centre, the health records, etc.

Respondent K11 concluded by stating that:

No component is being neglected because of integration. I don't think one process is affecting the other in any way. The only thing I say is that the process is helpful to the regulators... allowing them to have input from all our recommendations.

Respondent N14 accepted that there is a tendency that, by nature, people would always be biased based on their interests. He further elaborated by stating that:

There is the likelihood that... some focus will be on specific components of the study more than others. This depends on the peculiarity of the environment in which the project will be located. Indeed, the various consultant are independently focussing on their areas.

The respondent stated that the effect of any possible conflict is reduced by the independence of the respective teams and highlighted the possibility of another form of bias that could come from pressure from what the community wants. To further explain this, the respondent had this to say:

But I must also say that the possibility of having biases will always be there because there are certain areas... let me give an instance of an EIA study that I carried out in a community; the people in that community were ... more interested in the possible economic benefits... So, it can compel the consultant to concentrate more on the possible socio-economic impact of that project on the community. When that project was submitted, the people were not interested in knowing the impact of that project on their health or biophysical

environment. Their area of concentration was on how to enhance socio-economic status.

Respondent N14 summarised by stating that " some focus will be on certain components of the study more than others depending on the peculiarity of the environment that the project is going to be located". Emphasis must always be on recruiting "competent experts in different fields" because EIA is "Multidisciplinary."

Respondent M13 stated, "Even as important as health and social impacts are, those at the helms of affairs are more biophysically biased". However, respondent G07 stated that issues with clashes of interest and coverage of each component are all sorted at the scoping stage. He stated that during scoping:

The components of the environment you want to study, and the scope of those studies are submitted to the Ministry of Environment. They have the resources in-house to know whether this is adequate, and they collaborate on this when they carry out the initial Environmental evaluation for the site verification.

He explained that during the scoping exercise, the scope of each component is drawn to ensure that all aspects are covered. He concludes that "these things are settled at the scoping stage".

Respondent P16 explained that they (his team) operate independently of other teams, so there are no clashes of interest. He stated that:

There's no conflict in the various components. In fact, there are three distinct components. ...They are distinct, and there is no conflict at all. Well, I don't think there is any conflict. But let me make you understand this: the proponent consults the socio-economic consultants separately, the health impact consultants separately, etc.

Respondents F06 and H08 dispelled the existence of clashes of interest between teams. Respondent H08 attributes the relevance or contribution of each team to the "intellectual strength of the team". Accordingly, Respondent I09 stated that "it depends on the terms of reference and the nature of the project" and is not a function of inherent biases or conflicts.

6.2.3.5 Prospects for Adequate Health Coverage

This sub-theme summarises some inputs (from the responses) that the researcher feels are signs or prospects of improvement or development in understanding health coverage. Respondent J10 highlighted some signs of a better understanding of health coverage amongst the citizen of the Niger Delta. He stated that this is due to the increasing health consequences of environmental pollution. He illustrated a singular incidence in a community that had previously suffered from gas pollution. He stated that:

The communities (about 4) emphasised the health impacts of the proposed projects and the existing projects. So, in short, there is much importance now attached to health impacts and social impacts assessment in Nigeria and particularly in Niger Delta.

However, this is due to an extreme case of exposure. It is believed that this might serve as a deterrent to surrounding communities, improving community awareness of the health consequences of environmental degradation.

In addition, Respondent J10 also illustrated that sincerity from other stakeholders should accompany the increasing awareness. He gave an example of good practice from a particular company (ENERGIA) that operated in the community where he worked. He stated that:

Energia has been sincere about implementing whatever was in the recommendation or the MOU. This goes to show that a company that wants to implement and positively affect the community can do so, and there is no bias against each component. It depends on the company and the stakeholders involved.

Other respondents mentioned improvements in standards. Respondent K11 stated that the required standard for EIAs has improved. He stated, "When you look at the standards now, there are more in-depth requirements on health and socioeconomics. Even on the biophysical, especially on the issue of biodiversity and all that... On Conservation of environment, etc." The respondent further stated, "Most of these requirements are within many legal frameworks you must cover."

Respondent L12 acknowledged the importance of the health component of the assessment and stated that "it is an essential aspect of impact assessment because whatever we are doing in the environment, the end users are the human beings and the animals". He further recommended that more education and awareness be created among policymakers.

Respondent M13 acknowledged that "there is room for improvement" but stated that more effort has been put into the coverage of the health and social component of the assessment lately. He narrated an incident where the entire process was halted due to demands for more inclusion of health and social impacts:

I have been a part of it myself and have been to the field, where they insisted that if the people in the community are not around, the committee process will not go on. They insisted that if the health and social components are not taken care of well, the process will not go on....and all that.

It is hoped that this increasing interest and awareness will serve as avenues for growth and development. Similarly, other respondents reaffirmed the importance of the health component. This reaffirmation and the increasing demand for its inclusion by international and local standards presents a bright prospect for health impact coverage.

6.2.3.6 Theme (A3) Summary and Relationship with other Themes

Health coverage is a critical area of interest for this research. Theme A3 covered its challenges and level of coverage, and respondents' opinions and suggestions on ways of improving the process were captured. This leads us to the next theme, which is concerned with implementing recommended mitigations after an IIA report has been submitted. The areas of interest covered in these intertwining themes combined to influence the outcome of the entire IIA process.

6.2.4 Theme A4: Implementation of Mitigations

The main essence of assessing projects for possible impacts is to ensure that impacts are identified and mitigated. Therefore, implementing mitigation plans is at the forefront of any successful impact assessment project. Respondents discussed the

implementation procedures as practised in the Niger Delta and discussed the challenges that are hindering its implementation. Details of their responses under this theme are discussed below under headings of the process of mitigation, monitoring and enforcement, and levels of implementation. Others are challenges of implementation, consequences of implementation and non-implementation, and recommendations for improving the mitigation process.

6.2.4.1 The Process of Mitigation

The mitigation of impacts from proposed projects is mainly the responsibility of project proponents. All respondents accepted this standpoint. All respondents also highlighted the role of regulatory bodies in enforcing the implementation of the Environmental Management Plans (EMP). Most practitioners also explained that mitigation measures are summarised in a document called EMP and presented alongside the EIA report. The project's proponents are mandated to implement the EMP after the official approval of the EIA. According to the FUIO EIA report, the EMP is:

The essential and stand-alone component of an EIA that provides the assurance that the mitigation measures developed for reducing the effects of adverse associated and potential impacts to as low as reasonably practicable (ALARP), as well as those proposed for enhancing beneficial impacts, are implemented, and maintained throughout the project lifecycle.

Most reports suggest that the EMP deals with environmental management, as the name implies, but its object often includes establishing and maintaining ALL mitigation measures. The objectives for the EMP of the FUIO EIA report include the following:

- a) To demonstrate that a systematic procedure has been established for the project, ensuring that all project activities are executed in compliance with applicable legislation and FUIO policies on Health, Safety, Environment, Security, and Community Relations.
- b) Show that mitigation measures for all impacts and effects have been established and shall be maintained throughout the project's life cycle so that impact risk levels will remain ALARP.

- c) Demonstrate that emergency response measures will be in place. This will ensure that adequate responses in case of emergency have been established for the project and
- d) Set out the structure that will ensure compliance by FUIO and its contractors with the EMP.

Respondent H08 suggested that:

The EMP assigns responsibilities to different groups of people; in most cases, the primary responsibility remains with the project proponent. For instance, ...provide facilities, scholarships, training, etc. All these are not given to the government to carry out; they are usually given to the company to provide for the community, the host community. Most times, the companies can meet up with that, but most times, they cannot. When you wait for the government, the government may not be forthcoming.

All the respondents explained that after the EIA has been approved, the implementation of the EMP is the project proponent's responsibility. Respondent M13 stated that:

The EMP is the company's responsibility and shall become its working tool. The company's head of works shall be the main custodian and should exercise an auditing role to ensure internal compliance. It shall be regularly updated throughout the project's lifespan to incorporate improved technologies, better environmental regulations, management systems, guidelines, and policies.

Respondents also highlighted the role of government regulatory bodies in ensuring that the EMP is fully implemented. Respondent F06 explained that government agencies are responsible for following up to ensure these measures are implemented. The respondent had this to say:

When these companies get their EIA reports, there is usually a follow-up from the government. They work with government agencies... people from the Ministry of Environment, and all of that. So, the government is the one that

follows up on enforcement to make sure that the recommendations are being implemented as recommended.

6.2.4.2 Monitoring and Enforcement

Most respondents explained that the role of monitoring falls outside their purview. They, however, explained their understanding of the process from their experiences. Respondent J10 stated that the major regulatory agencies (FMOE, DPR and SMOE) are mainly responsible for enforcing the implementation of mitigation measures. He stated that:

The people involved are the Department of Petroleum Resources (DPR), the Federal Ministry of Environment (FMOE), and the State Ministry of Environment (SMOE). These are government agencies that monitor whatever is happening in the environment, and so, ultimately, whatever comes out of the recommendations.

Similarly, respondent F06 highlighted the role of government in the monitoring process by stating that:

There are special government units responsible for implementation. Yes. We have government agencies, most of which are under the Ministry of Environment both at the federal and state levels. So that's why we say that most times while we are carrying out the EIA, they are part of the process. They come in as a control and monitoring team to see what you are doing, and they are responsible for following up on the recommendations after we submit them in our reports.

Respondent M13 explained that although the regulators are responsible for monitoring and enforcing compliance, the companies contract external consultants to monitor and report their implementation and present reports. He stated that "during impact monitoring... during monitoring of the implementation of Mitigation, the company themselves will hire consultants, who will do the thing (monitoring process) ... the work that the regulators do (the role) is to oversee". To further explain his point, the respondent had this to say:

I have been a part of the impact management and monitoring study..., where we looked at what they are doing regarding the impacts proposed or the mitigation measures proposed in the previous EIAs.

He observed that "when it comes to implementation, we are far behind. We need to improve on that with time".

Respondent G07 explained the monitoring process and the role of the National Environmental Standards and Regulations Enforcement Agency (NESREA). He stated that:

They require you to monitor the implementation of those mitigation and how effective the mitigation measures have been. Then, you report and submit quarterly reports to the Ministry of Environment. They would come to the Impact Mitigation Monitoring Exercise (IMME) and check whether what you are reporting is what is on the ground. Then, they would check the effectiveness of the professed mitigation measures. Because there are some mitigation measures that the proponent will find challenging to implement, ...the ministry can look for a better actionable measure to allow them to modify. ...the National Environmental Standards and Regulations Enforcement Agency (NESREA) polices the process. Once the Ministry of Environment has approved the EIA, they go about seeing that they are implemented. They also go after those who have not completed EIA before starting their projects.

Respondent H08 emphasised the government's role in monitoring mitigation measures. He stated that most impact assessment reports recommend that the government provide an enabling environment for implementing mitigation measures. He also mentioned that "Monitoring the implementation of EMP is sometimes an expensive exercise and requires funding which government would usually not want to undertake."

Respondent K11 also reiterated the role that monitoring plays in the success of impact assessment. He explained that:

Monitoring is the only area they would use to hold the project proponents to implement some of these recommendations. The companies certainly have a promise that they will implement. On the government's side, I always advise that they do one thing: monitor.

The respondent further explained that the process could also be open to fraudulent activities and depends on the capacity of the person who goes for the monitoring process. To buttress his point, respondent K11 stated:

It depends on who comes in for the monitoring ... If he is ready to compromise, he will; if he is not ready to compromise, he will hold you down So, that is the reason. Generally, implementation depends on the capacity of the person monitoring it. So, the best I can say is that the government should increase its capacity for monitoring.

He illustrated a scenario where a company consulted him to represent the project proponent during a monitoring exercise. He explained that "some of those in government employ do not have the prerequisite capacity to detect some of the flaws to effective implementation monitoring. So, the government should increase their capacity."

To emphasise that effective monitoring could result in prudent mitigation measures, Respondent G07 espoused that projects funded by 'donor agencies' (Development agencies like WHO, World Bank, etc.) attract better mitigation measures. According to him:

Mitigations are not properly implemented except for projects funded by donor agencies, i.e., development partners. This is because donor agencies always follow up to ensure these things are correctly implemented.

It seems that projects funded by donor agencies tend to implement mitigations better because they are closely monitored and followed up to ensure proper execution. On the other hand, other projects may not have the same level of oversight, and thus, mitigations may not be adequately implemented. It would be beneficial to explore ways

to improve the implementation of mitigations across all projects, regardless of funding source.

Most respondents believed that the monitoring process should be improved when assessing the monitoring system's level or effectiveness. Respondent K11 stated, "In terms of government performance. Based on my experience, I will say that they need to step up. They are trying, but they need to improve more".

Respondent J10 also reiterated that the level of monitoring is currently low and illustrated the issues surrounding gas flaring in Nigeria, where companies are still flaring gas even though the government had earlier set a 2020 dateline for companies to stop doing it. He explained that:

So, the government, on their part, has been telling us that from 2020 or through the years before 2020, flaring should stop and any company that fails to meet that 2020 target should be penalised. They will shift their 'goal post' again when it gets to that year. That is why I can sense some level of compromise because... or maybe the government is more interested in whatever fine or penalty they collect from it.

Details of points extrapolated from responses under the mitigation subhead are tabulated in Table 6.4.

Table 6.4: Monitoring: A Review of Respondent's Views

| | | |
|---|---|---|
| Process | Embark on Impact Mitigation Monitoring Exercise (IMME). Monitor implementation of EMP. Have routine schedule (e.g., quarterly etc.) depending on type of project. | |
| | Project Proponent | <ul style="list-style-type: none"> • Implement the mitigation measures. They also engage consultants for technical inputs. • Self-regulatory initiatives • first-party Follow-up initiative |
| Responsible parties and responsibilities | FMoE | <ul style="list-style-type: none"> • Monitor and enforce: They also engage consultants for technical inputs. Carry out environment monitoring and policy monitoring activities. • second party follow-up. |
| | DPR (now NMDPRA and NUPRC). | <ul style="list-style-type: none"> • Monitor and enforce: They also engage consultants for technical inputs. Carry out environment monitoring and policy monitoring activities. • second party follow-up. |

| | | |
|----------------------------|---|--|
| | SMoE | <ul style="list-style-type: none"> • Monitor and enforce: They also engage consultants for technical inputs. Carry out environment monitoring and policy monitoring activities. • second party follow-up. |
| | NESREA | <ul style="list-style-type: none"> • Monitor and enforce: They also engage consultants for technical inputs. Carry out environment monitoring and policy monitoring activities. • second party follow-up. |
| | Development partners | Monitor to ensure compliance. Conditioned their funding on strict compliance to implementation |
| | consultants and consulting firms | They verify compliance. Are sometimes engaged by both project proponents and the regulators. Needs to exercise professionalism. Some respondents expressed views that there are reported cases of compromise. |
| | community and other stakeholders. | <ul style="list-style-type: none"> • Should also be involved and carried along by all parties. Respondents are of the view that their holistic involvement is currently low. • Third party follow up activities. |
| Level of monitoring | Assessed as low by most respondents. One respondent assessed monitoring as “needing more work” | |
| setbacks | <ul style="list-style-type: none"> ➤ Lack of expertise ➤ Open to compromised by consultants. ➤ Government interest in profiteering from fines and penalties ➤ Inconsistency in policies ➤ Funding ➤ Political will. | |

6.2.4.3 Levels of Implementation of Mitigation:

Mitigations, as contained in most EMPs, are presented in stages (e.g., construction, implementation, and decommissioning) and ranked based on severity. They are required to be implemented within a defined timeline as documented in the EMP. Respondents were required to narrate their experiences and opinions on implementing mitigations based on the stages of respective projects and the proposed mitigations. Community dwellers' responses were based mainly on the mitigations contained in the FUIO EIA report. They were required to focus on those mitigations that could be assessed, such as community interventions, health awareness, traffic controls, etc. Those were mostly actions that were required to be implemented during the construction phase (which is ongoing) and during the operational phase (which is

also ongoing). The impact assessment practitioners were required to make their assessment based on their experiences in the field. They were required to express their lived experiences on levels of implementation of mitigations by companies (as project proponents) and by governments (as project proponents and as regulators).

Respondent A01 reiterated that the impact assessment did not get to the community, making it impossible for them to understand the proposed mitigation and assess their implementation. The respondent had this to say:

Well, in the first instance, we didn't even know that there was such a report. It's a case of us not entirely being aware that there was such a document, and as such, we have not been taking cognisance of what has been implemented or not. I do not think they have implemented anything from what we now know as proposed mitigations.

Respondent B02 was quite cogent in expressing the lack of or poor level of mitigation implementation. He summarised by stating that "they don't even do the EIA, talk less of implementing mitigations. They are not interested in the people."

Similarly, Respondent C03 had this to say:

As I said before, I do not know anything about the EIA, and I do not think they have done anything. If they had good intentions, the report would have been done correctly. However, as I stated earlier, certain limitations have caused some delays in project implementation based on the timeline for the other EIA I was involved. Therefore, I cannot entirely explain the level of implementation of mitigation. The project is undoubtedly falling behind schedule.

Respondent C03 dismissed any notion of high implementation of Mitigations from the FUIO EIA but explained the abandonment or delay of another EIA (another EIA he was involved with as a community participant), which makes it impossible to assess implementation. He did not acknowledge the impacts that could accrue from having started the project (land possession, clearing, etc.). He also did not state if those accrued impacts would have required some mitigations or if those were implemented.

Respondent D04 also expressed his assessment of the process based on his experience with the FUIO EIA and another pipeline project in which he had been involved. For the Otuoke EIA project, he maintained that the EIA process did not follow due process, so there would not have been any sincere implementation. He stated that "from the knowledge of proposed mitigations I have now, their level of implementation is very poor". For his other pipeline project experience, he stated, "I did not follow up to see the final report and to know what was included". The respondent continued by stating that:

To be very candid, ...we always like to use the oil companies as examples. Each time they carry out these impact assessments to identify areas of problems that will arise regarding the project, ...they always fail to implement those areas. ...They do not implement the recommendations in most cases after the approvals. The levels of implementation by these companies are very poor.

Respondent E05 also assessed the level of implementation based on his experience with the FUIO EIA and expressed his view by stating:

Actually, there was nothing much. They came and provided medical outreach to the community but did not do anything, ...in short, they have not made any effort to implement anything. The government cannot regulate itself. The school is a federal university, so the principal owner is the federal government. Although we did not have access to the report to know their level of implementation point by point, from what we know now, we know that the government is not doing anything to implement the report.

As stated earlier, the impact assessment practitioners gave assessments based on their experiences in the field. They expressed their lived experiences on levels of implementation of mitigations by companies (as project proponents) and by governments (as project proponents and as regulators). Respondent F06 stated that:

Firstly, we must look at ... the challenges of continuity. ...Most times, ...these projects never come to realisation in the lifetime of a particular government. So, by the time the next government comes, you don't know the extent through or

...what goes on after that recommendation. ... you don't know the extent to which these recommendations have been followed. The bulk of our work stops at carrying out the survey and turning in our report.

The respondent further stated that for smaller-scale projects with small-scale impacts and mitigations, such as rural water supply and flood/erosion/drainage control works, "we see that some of those projects are followed through". He went on to state that while the government's level of implementation may be hard to trace because of a lack of continuity, their level of implementing mitigations (when they are the project proponents) is low as regulators do not often police them. He further explained that individual companies tend to perform better than governments as project proponents. He stressed the impact of monitoring by stating that projects monitored by development agencies (as donors) perform better in implementing mitigations. The respondent summarised by stating, "I think the onus lies or falls on the regulatory agencies because those are the people who are supposed to follow up to make sure that those recommendations are being followed to the letter".

Respondent G07 espoused the significance of monitoring and the effect of a low level of mitigation on the practice of impact assessment. He started by stating, "The main limitation to integrating HIA and EIA is in the implementation of recommendations. The proponent's commitment in implementing the recommendations from the report".

The respondent further explained that companies comply with implementing mitigations when monitored. However, when they are not, they only implement if those mitigations will affect their production or profits. To explain his view, respondent G07 stated:

Companies only comply when they are monitored. When they are not monitored, they collect reports and recommendations and put them in their lockers. When they are monitored, ...they know that these guys (regulators) can come in anytime to check what they are doing.

Respondent G07 further explained that given the generally low level of monitoring and the challenges in Nigeria, he assesses their implementation level as low but stated that it depends on the type of company and the level of scrutiny from regulators. He

stated that "apart from projects which are funded by the donor agencies, i.e., development partners, you do not see it properly implemented. The implementation level is low".

For government projects (when the government and their agencies are the proponents of projects), Respondent G07 explained that the regulators do not monitor or enforce strict adherence to EIA laws, even less its implementation. In his expression of that view, Respondent G07 had had this to say:

If it is a government project and it is wholly funded by the government (not through loans or third parties like development partners), you find them either not doing the EIA at all or awarding the contract, and then the contractor, after starting construction, now initiates the EIA." If the government is the project proponent, they do not pursue it.

Respondent H08 summarised the process by stating that:

Once a company has taken off, it usually manages itself with the community to have a smooth operation so that it would not cause community unrest because of its operations. Once they can achieve that, it will carry on with its processes and go on with its operation. While the government would usually just say okay, you have your certificate (approval); you can go ahead and operate.

He, however, stated that companies are "trying" to implement their mitigations.

Respondent I09 flatly stated that the implementation of mitigations or the recommendations of the EIA report is "really poor at the moment." He explained that companies are doing better than governments in implementing recommendations but pointed out the possibility of bribery. The respondent explained that companies do better because of their closeness to stakeholders and because of the possibility of conflicts, which may interrupt their profits.

On the role of Government, Respondent I09 expressed his disapproval of their level of performance.

For the government, they do not do their best. ... I am talking about the regulatory agencies. They have failed in their responsibilities; they do not do their job, ... a lot of them are compromised; they do not even go to the field to find out what is happening once they have been taken care of (paid off or bribed).

Respondent J10 stated that companies and the government are "trying". He, however, stated that a few companies are not "trying". He explained that "inconsistencies in monitoring" are a big implementation challenge. He explained that bigger-scale companies are doing better than the smaller companies in terms of "corporate social responsibilities". He recounted the provision of "small corporate social responsibility" and "appeasement" of the people to "make them happy" as a sign of implementation. However, his assessment of performance from "big companies" did not consider the level and severity of impacts generated by these companies and the percentage of mitigations they implement. Previous expressions from respondents have revealed that some community dwellers need education to understand the impacts and their corresponding mitigations and to know the expectations from these companies. So, constructing a borehole (for instance) can make a community (which hitherto had no access to water) very jubilant. This does not necessarily mean that the company (with a large-scale impact, such as oil spillage) has performed well in its implementation.

Respondent K11 stated: "Some companies are committed, others are not". He went ahead to summarise the level of companies' implementation by stating that:

In summary, commitment depends on the company's capacity and category. So, on a scale of one to ten, they have 6.5 in their performance. This is mainly due to the big international companies, which are usually more committed, while the smaller medium-sized companies do not usually show much commitment to implementing recommendations.

He, however, explained that "it is dependent on monitoring and the people involved in monitoring". He further explained that when people are compromised, the implementation of mitigations could be significantly affected. On the part of the government, he stated, "In terms of government performance. Based on my experience, I will say that they need to step up". He stated that all project proponents

consider "the financial implication and specific interest when considering implementation".

Respondent L12 expressed regrets over the level of implementation of mitigations because of what he described as "outright disregard of their concerns". To explain his point, he had this to say:

Many times, ... we submit it to them, and they will tell us we are going to look through it, and because sometimes they are not equally involved in what we have said, they place it somewhere... The process is highly and heavily polarised", ... "implementation becomes the question mark. It becomes a nightmare in some cases, from my own experience. So, I score that very low". On the part of the government... many things are being arranged, but implementation is zero. There are no statistics to show these things are being done, ... to follow up.

Respondent M13 also highlighted the low level of implementation by stating that some recommendations are "taken on board, ...but we also need to improve on or ways. That is the much I can tell you. When it comes to implementation, we are far behind. We need to improve on that".

Similarly, Respondent M14 puts had this to say:

In most cases, the implementation of mitigations from the EIA reports has been very poor. We have been raising serious alarm about this.

Regarding the government's implementation performance, Respondent O15 stated that the government "has not been doing well." He stated that companies react to communities' actions and try to appease them. He further stated: "If the community is peaceful, ...sincerely, there might not be any implementation of some of those social interventions."

The respondent further explained that most companies respond by implementing some aspects of mitigations that regulators mostly require during "routine regulatory approvals" ...

There is always a follow-up on those, but for those social interventions, ...you will hear people complain that they had promised to rebuild our health centre for the past ten years and have not done it. So, most of the time, there is no push from the government to ensure some of these things are done.

Regarding possible disparity between each component of EIA (health, social and environment), all the respondents believe there is no disparity when implementation decisions are made. They explained that choices of mitigations are influenced by factors such as impact severity, company interest (e.g., effective production), financial cost, community interest, etc. Table 6.5 provides a summary of responses on the level of implementation of mitigation within the region.

Table 6.5: Level of Implementation of Mitigations - Respondents Views

| RESPONDENT | LEVEL OF COVERAGE | QUOTE/ REMARK |
|------------|-------------------|--|
| A01 | Low | "From what we now know as proposed mitigations, I don't think they have been implementing anything". |
| B02 | Low | "they don't even do the EIA talk less of implementing mitigations". |
| C03 | Low | "Like I said before, I don't have any knowledge about the EIA, I don't think they have done anything". |
| D04 | Very low | On FUIO EIA: "from the knowledge of proposed mitigations, I have now, their level of implementation is very poor". On other Experiences: They don't implement the recommendations in most cases after the approvals have been given.... The levels of implementation by these companies are very poor". |
| E05 | Low | there was nothing much. They came and provided medical outreach to the community but didn't do anything. ...in short, they have not made any effort to implement anything. |
| F06 | Average Low | On Companies: "we see that some of those projects are followed through". On Governments their level of implementing mitigations (when they are the project proponents) is low |
| G07 | Low Low | On Companies: When they are not monitored, they just collect those reports and those recommendations and put under their locker. The implementation level is low". On Governments If Government is the proponent of the project, they don't go after the project. |
| H08 | Low Low | On Companies: and ones they can achieve that, they would carry on with their processes and go on with their operation |

| | | |
|------------|----------------------|---|
| | | On Governments: While government would usually just say okay you have your certificate (approval), you can go ahead and operate”. |
| I09 | Very low Very low | On Companies: “really poor at the moment”. On Governments: “They have failed in their responsibilities”, |
| J10 | Average Average | On Companies and Governments: companies and government are “trying”. |
| K11 | Average Low | On Companies: in a scale of one to ten, I might say they have 6.5 in their performance. Mainly by the big international companies On Governments: “In terms of governments performance. Based on my experience, I will say that they need to step up”. |
| L12 | Low Very low | On Companies: “we submit it to them, and they just place it somewhere”. On Governments: the process “is highly heavily polarised”, So, I score that very low”. |
| M13 | Low | On Companies and Governments: When it comes to implementation, we are far behind. We need to improve on that”. |
| N14 | Very Low | On Companies and Governments: “I must confess that the implementation of mitigations from the EIA reports in most cases have been very poor. |
| O15 | Low Low | On Companies: sincerely there might not be any implementation of some of those social interventions”. On Governments: “have not been doing well”. |
| P16 | Low | On Companies and Governments: people are so unhappy that government is not doing enough. Not enough implementation |

6.2.4.4 Challenges to Implementation

Respondents highlighted several factors that affect the adequate implementation of mitigations. This subtheme harmonises these challenges. The challenges presented in subheads were identified inductively from the data. Some of these challenges were highlighted under Themes A1, A2 and A3. Those previously highlighted challenges also affect other aspects of the impact assessment process. These challenges are mostly lack of adequate participation, an organised funding structure, and other challenges of the impact assessment process covered in 6.2.1.8.

The need for adequate community participation is a significant challenge to implementation. Respondent A01 expressed his dissatisfaction with the level of implementation by stating his lack of knowledge of the FUA EIA report, even less of

its implementation. To highlight this, he said, "Well, in the first instance, we do not even know or fully understand that there was such a report. He explained that they (the community) can only be part of what they know, so their implementation needs to be more transparent.

Similarly, respondent P16 stated, "in most part, people are so unhappy that government is not doing enough... people are annoyed, people are angry, and they tend to be antagonistic." He explained that this leads to low participation, which reduces scrutiny, hence the avenue for project proponents to avoid implementation.

The need for an organised funding structure for the impact assessment process is also a significant challenge. Respondent O15 highlighted the challenge of financial influence in regulatory functions. He stated that the funding process gives companies and project proponents more power to influence regulators' functions easily. He explained that this is more alarming given the high corruption and malpractices within the sector. He stated that "he that pays the piper, detects the tune. Government should make the sector independent and empower the regulators to understand the technicalities of their work". He explained that the regulators depend highly on the project proponents to fund every aspect of their activity, making them vulnerable to external influences.

Other challenges that are also applicable to other aspects of the EIA practice

Other challenges that were earlier highlighted under themes A1, A2, and A3 may also challenge the implementation of mitigations. They are general challenges that affect all or other aspects of the EIA process. Table 6.2 earlier summarises most of these challenges.

6.2.4.5 Consequences of Implementation/Non-Implementation of Mitigations

Most respondents discussed the consequences of implementing mitigations. Respondents believed that the current level of mitigation implementation has consequences for project proponents, the government, and society. This subtheme presents these consequences. The consequences include financial cost implications,

health and safety implications, corporate image implications, restiveness and conflict, productivity implications, and building trust.

Most respondents reiterated that although most companies try to save costs by avoiding implementation, it would be more economically expedient for them to take precautionary measures by implementing mitigations. Respondent N14 explained this fact with an illustration. He stated: "They do not understand that if they do everything to prevent a disaster, it will save them more cost". He gave an analogy from the experience of a particular oil company he worked with:

There was a case from an oil company in Nigeria. They were meant to replace their pipeline every 25 years. For one reason or another, they did not replace that oil pipeline, which was almost 35 years old. It naturally gave way, and there was massive spillage into the environment. They needed to spend much more than they could have spent ...and... they could have prevented the environmental disaster.

Similarly, other respondents explained that the government would equally save costs by investing more in enforcing the implementation of regulations. Respondent 015 criticised the increasing dependence of the regulatory agencies on funding from project proponents. He stated that the government should adequately fund the activities of the regulatory bodies. He explained that this will ensure compliance and help avoid governments' excessive spending on the resultant effects of non-implementation of mitigations.

For example, until recently (maybe one or two months ago), the DPR was being run (funded) by the government to do the regulatory work alone, but now the DPR is (most likely) sourcing funds, too. So, you have to pay for every regulatory function they are doing. You pay them to review your TOR, you pay them to come to the lab for witnessing, you pay them even to review your documents, you put them in accommodation, etc. They are dependent. The government should fund them; this will help them be independent, and the government will eventually save more by preventing disaster.

Non-implementation of mitigations can also have **health and safety implications**. Most respondents attributed the lack of mitigation implementation to health and safety disasters. Respondent J10 used the incessant gas flaring within the region as a point of illustration. He had this to say:

Take, for instance, the gas flaring issue in Nigeria. It's a big problem. A place like Kwale, in Ndukwa West LGA, has almost eight marginal fields and different companies operating marginal fields. ...You find out that the temperature is always very high because of gas flaring around that environment, so there would be heat while you are in your house, even when it is raining. These high temperatures have adverse effects on health.

Similarly, respondent L12 stated: "The health implication in the country is very pronounced". He stated this while expressing his dissatisfaction with the level of mitigation implementation. Respondent N14 also aligned with other practitioners by illustrating a fatal incidence, which he claimed resulted from the non-implementation of mitigative measures. He presented his illustration in this manner:

A lady nurse had been accumulating pollutants for years ...and fell sick. She had fallen sick over a while, leading to her being taken out of the country. It was not until she was taken out of the country that the cause of her illness was discovered. It was due to inhaling a particular pollutant over the years. The pollutant had already passed the threshold. The community lost that lady due to long-term accumulation.

Organisations' corporate image can also be affected by the non-implementation of mitigations. Some respondents identified protecting an organisation's corporate image as a compelling benefit of implementing mitigations. Respondent J10 explained how a company's compliance with implementation can lead to an excellent public image. He used the illustration of the activity of ENERGIA company to explain his point. He stated that:

Energia, as a company, ... operates in the Imomendo area, and I will tell you that the MOU that Imomendo entered with Energia is a very good one compared to other MOUs entered by other communities ... Not only that, ...

Energia has been so sincere about the implementation ... and the communities are supporting Energia operations because Energia has been so sincere to them. This has helped to build Energia's good public image.

He further stated that companies that "try" to implement mitigations are companies with "high reputation" and structured health and safety programmes. He stated that "some of the companies are trying in terms of implementation. For example, Shell (SPDC) is making a good effort in terms of implementation."

Similarly, Respondent P16 linked the poor reputations of government agencies and other cooperating organisations to their lack of implementation of mitigations. He also attributed that to communities' lack of appetite and trust in governance, which also affects their desire to participate in community engagements, as stated in Table 6.2

Respondent G07 reiterated that donor agencies or development partners consider companies' track records in implementing mitigations. He stated that projects funded by international donor agencies attract a higher level of implementation. He explained that a good track record of implementation can give your company the desired reputation to attract funding from such organisations.

Another identified consequence of non-implementation of mitigations is restiveness and conflicts. All the respondents considered the low implementation of mitigations and the government's attitude towards the region's development as contributing factors to the high level of restiveness and conflicts prevalent in the region. Respondent D04 highlighted this point by stating that "this has caused problems and conflict between communities and the companies, and it's only when there are lots of conflicts that affect their (companies) operation that they may try to bribe their way out". He also explained that companies and government agencies should try and prevent these conflicts by implementing mitigating measures. He further explained that the youths are becoming more "volatile" and are ready to take advantage of any bad situation to foment trouble and thereby frustrate the efforts of companies and the government.

Respondent G07 explained that the injustices done to some people in the host communities (by the damages done to their immediate environment) would become a

reason for younger generations to become violent agitators. In his words: "By the time the children of these people grow up tomorrow and discover that their fathers were deceived because they did not understand that they were selling their birth rights away, the children will start agitating".:

Similarly, Respondent H08 linked the implementation of mitigations to community frictions with project proponents. He explained that most companies that do not know how to manage their affairs would not have a smooth operation. He explained that companies that relate well with their communities are operating safely. He, however, explained that the government should ensure that communities are enlightened enough so that companies do not just focus on appeasing a few "ignorant" community leaders ("who are not sincere") without fully protecting the environment and the health of the entire populace. He stated that "once a company has taken off, they would usually manage themselves with the community to have a smooth operation so that they would not have community unrest due to their operation".

Respondent O15 also highlighted the connection between implementing mitigation and community unrest. He explained that the government should ensure adequate enforcement to avoid community unrest. He decried a situation where government agencies would be nonchalant until there were conflicts and restiveness. He stated that government agencies "have not been doing well on their part ... The only time the government tends to come in is when there are security issues. Probably, there is community unrest. They would now say you promised them electricity, have you done it?"

Most respondents emphasised the relationship between productivity and a company's ability to avoid distractions by ensuring that all related environmental and health impacts are adequately mitigated. Respondent N14 explained this relationship in his analogical illustration. He referenced his earlier illustration of a company that failed to replace its pipeline on time and stated that the process not only cost them more money but also distracted them from their normal operational flow and halted their production until the spillage was stopped and the pipeline was replaced. He stated: "This is one of the things we have been telling them, that look, prevention generally is better than cure".

Implementation was also linked to the possibility of building trust amongst stakeholders. In identifying the challenges facing the EIA Practice, respondents stated that most community participants generally lack the appetite to partake in the impact assessment process. Accordingly, they explained that a simple way of building trust and restoring confidence would be to improve on implementing mitigation, especially those aspects that directly affect the well-being of the people. Respondent J10 stated that "sometimes", "communities are still reluctant to be involved because of non-implementation of MOUs and non-implementations of request". He suggested that all stakeholders should work towards improving the implementation of mitigation to restore trust and encourage more participation.

CHAPTER SEVEN

Discussion

7.1 Introduction

This chapter discusses the results as presented in the previous chapter. The chapter presents the discussion in three subheads, which capture the inputs from the studies covered in this research and seek to satisfy the overall aim and objectives. The research aims to evaluate the use and implementation of Integrated Impact Assessment and provide tools to improve the process in the Nigerian Niger Delta Region. It is focused primarily on the health impact component of the Environmental Impact assessment process. Listed below are the research objectives, as presented in the first chapter.

- i) To develop and validate an evaluation tool/checklist for assessing the content and quality of integrated impact assessment with a particular interest in the health impact assessment component.
- ii) To identify relevant and recent Integrated Impact Assessments carried out in the Nigerian Niger Delta region.
- iii) To appraise the identified integrated impact assessments (for content and quality) using the developed tool designed to assess the quality and health content of completed Integrated Impact Assessments.
- iv) To recommend improvements to the IIA processes by developing guidelines for improving health integration in environmental impact assessment and enhancing the implementation of recommended mitigations.

This discussion chapter explains how the results obtained in chapters 5 and 6 satisfy the research aims and objectives.

The researcher assessed the level and usefulness of available resources to understand the practice and integration of health impact assessment in integrated impact assessment. The outcome of this initial desktop assessment led to the initiation of study one, which developed a contextually relevant screening tool for health impact assessment. The developed tool aimed at contributing to the improvement of the HIA

process in the region. In study two, various guides were analysed in depth to understand the requirements of a standardised health assessment.

The first subhead of this discussion focuses on these two studies. It discusses the outcome of the tool development process and the practice of HIA in integrated impact assessment in the region.

The section also discussed the outcome of Study Three and emphasised assessing the practice and challenges of integrated impact assessment in the region. This research aims to improve the IIA process with particular reference to HIA. The evaluated reports in Study Three and the views of respondents in Study Four are discussed and used in formulating theories and conclusions on the mode of IIA practice (theoretical perspectives and practical views based on what is obtainable in the field), mode of financing, regulatory framework, and challenges to impact assessment practice.

The chapter also discusses the role of regulatory bodies in implementing mitigations and presents an overview of the implementation level. It further discusses the challenges facing the implementation of mitigation and the monitoring process put in place for monitoring the EMPs.

7.2 Improving Available Tool and Practice of HIA in IIA in the Region

As part of the research aim of adding to the resources available for HIA in the region and given the region's peculiar economic and political circumstances, the researcher designed a screening tool for HIA practice. A copy of the tool is attached as Appendix F. A testing process undertaken among regional stakeholders recommended the tool as relevant and user-friendly. The tool's design accounted for the sociopolitical peculiarities of the region and the effects or impact of project abandonment in impact management. A particular stage was added to the screening process to consider the potential impacts of project abandonment or conflicts.

The tool design utilised a rigorous and evidence-based approach using resources from a pool of systematically identified generic HIA screening tools. The tool design process

carefully assessed the included studies or HIA screening tools for quality, content, and context. The newly developed tool offers additional and improved features, including new stages for considering impacts caused by crises or conflicts leading to abandonments or delays in project implementation. The tool considerably improves previously available tools by providing a clear and concise guide and relevant supporting documents to guide the screening process.

The tool is not sector-specific but is generally applicable to all sectors. It would be desirable to improve the contextualisation process by adapting this tool to the region's specific sectors (such as oil and gas or construction projects). This tool will help to provide relevant resources to boost a robust evidence base for the practice of HIA and IIA in the region. It is also hoped that the study and usage of this tool will invite further comments, critique, and feedback.

The need for developing a contextually relevant screening tool collaborated with the outcome of study two, which showed that foreign national or local governments commissioned 76% of the documents reviewed in that study. The design of most of these documents may be to primarily meet the needs of their respective governments at either the national or local level. The remainder of the documents in the same study were either submissions made by international organisations or output from academic research institutes, respectively. These documents originated from four continents: Europe, North America, Asia, and Australasia. The countries involved are mainly developed countries. The paucity of documented evidence or guides originating from countries in Africa or similar developing countries calls for the submission made herein. The development of contextually designed tools should be encouraged within the region to ensure that they capture health issues likely to be affected by each project within the region.

Furthermore, based on the documents reviewed, HIA has a crucial role in tackling peculiar health issues and other challenges that are predominantly prevalent in developing nations. However, some of these might go unnoticed due to inadequate consideration and provisions being made to address them. An example is the role of conflict and project abandonment in impact assessment. Conflicts and project abandonment are major public health concerns in developing nations, including Nigeria. Waltz *et al.* (2019) highlighted the need to contextualise policy implementation

instruments to enhance effectiveness. This brings to the fore the need to look at the context of tool development and the need for national governments in these developing countries to encourage more research.

7.2.2 HIA Practice in Nigeria: Basic Requirements and Values of Health Assessment

It is important to assess the current level of HIA practice in terms of its compliance with the basic HIA requirements, especially as it relates to its compliance with HIA principles, values, methodology, and comprehensive coverage.

A reference to the guides analysed in Study 2 shows a consensus amongst HIA practitioners on the existence of core values and fundamental principles. About 57 per cent of reviewed documents expressly include lists of agreed values, while others acknowledge the existence of core values but fall short of presenting them. Some basic principles and values govern the processes of HIA. Much of the literature on HIA acknowledges this. HIA could, therefore, be said not to be value-free (WHO Regional Office for Europe, 1999; Kemm and Parry, 2004b; Birley, 2011; WHO, 2022). The Gothenburg consensus paper (WHO Regional Office for Europe, 1999) states four central HIA values: democracy, equity, sustainable development, and ethical use of evidence. However, these four values are in addition to the goal and value of HIA, which is the promotion and maximisation of population health via a comprehensive approach to Health (Birley, 2011; Kemm and Parry, 2004b; Quigley *et al.*, 2006; WHO Regional Office for Europe, 1999). HIA should contribute to good governance and remain robust while reflecting a socioeconomic model of health.

The value of democracy emphasises the people's participatory right to formulate, implement, and evaluate policies and programmes that affect their lives. They do this directly or indirectly through their representatives. The dialogue includes stakeholders or their representatives through focus groups, advisory groups, or workshops (Scott-Samuel and O'Keefe, 2007).

According to Bhatia (2010:51),

Stakeholders may include individuals or groups with a known or perceived interest in the outcomes of a decision that is the subject of HIA. Some examples

of suggested stakeholders include residents, employees or employers, sponsors of economic development projects, health providers or public health officials, and government agencies responsible for policy implementation or enforcement.

Participatory involvement has provided a learning curve (Kemmer, 2007) for HIA practice and has helped to enhance accurate prediction of impacts, improve decision-making, and increase transparency and local accountability. It also resolves social conflict and promotes social cohesion, making the public aware of the effects on health, which may lead to changed attitudes (Parry and Wright, 2003; Ståhl *et al.*, 2006). Despite the consensus on the value of democracy, some authors have identified some setbacks to its adoption to include the difficulties in bringing harmony between various parties, cost and time consumption and difficulties in choosing the right representatives (Kemmer and Parry, 2004; Parry and Wright, 2003; Wright *et al.*, 2005).

Ethical use of evidence as a value of HIA is the rigorous use of quantitative and qualitative evidence based on scientific disciplines and methodology to comprehensively assess the expected impacts (WHO Regional Office for Europe, 1999). Kemmer and Parry (2004a) describe it as the objective use of the highest scientific standards and criteria to select and judge evidence. Evidence, in this context, is a review of earlier published information or the production of new predictions based on the product of qualitative or quantitative research.

Equity as a value of HIA mainly focuses on the distribution of impacts amongst various population groups and seeks to ensure that the burden does not fall unduly on vulnerable populations (WHO Regional Office for Europe, 1999; Heller *et al.*, 2013). This value places HIA as a valuable tool in addressing health inequalities. Given that 84% of documents in Study 2 recommended equity considerations and the equally high percentage (81%) recommendation for steering group constitutions in the same study, HIA has strategically positioned itself as a tool for health equity and a democratic public health tool. It is a public health tool that can effectively reduce health and social inequalities among population groups.

Finally, the value of **sustainable development** ensures that both short- and long-term impacts (including direct and indirect impacts) are taken into consideration.

Acknowledging the critical attribute of flexibility when reiterating the steps used in HIA practice is essential, given its relevance and similarity to the steps used in EIA practice. While some authors consider this an asset, others opine that lack of reproducibility may lead to low reliability. Birley (2011) presented the HIA spectrum and attributed the variations to the levels of technicalities. Harris-Roxas and Harris (2011) attributed the existing disparities to the differences between HIAs of projects and policies, tight and broad definitions of health, quantitative and qualitative methods, legislated and voluntary HIAs, and rapid and comprehensive HIAs.

Despite the seeming flexibility in approaches, there exists a consensus on the component steps of an HIA (Harris-Roxas and Harris, 2011; McCallum *et al.*, 2015; Eckermann, 2013; Wernham, 2011; Taylor and Quigley, 2002). Study 2 shows that the first three stages of screening, scoping, and appraisal or assessment were consistent in fifty-five (93%) of the documents reviewed.

The steps provide a framework for the assessment process, starting with a screening exercise, which rapidly ascertains the necessity of an HIA (Stapleton and Cheney, 2004). Despite the consensus on the need for screening as a component of HIA, the tools and methods of carrying out screening vary amongst practitioners in different countries, and just like the overall approach, the intended purpose of the HIA tends to direct the approach vis-à-vis the tool used. The need to identify potential influences on health determinants has guided the process of screening tool development, and several screening tools have been developed over time. (Greater London Authority (GLA), 2001; Grinnell, 2013; Metcalfe *et al.*, 2009; Stapleton and Cheney, 2004; Whitford, 2008; Vohra *et al.*, 2003).

The next step in the HIA process is scoping. The IAIA considers scoping as a time for setting of boundaries and formulation of terms of reference (TOR) (Quigley *et al.*, 2006), while other scholars consider scoping as a time to develop the scope, focus, action plan and methods of carrying out the HIA (National Assembly for Wales, 2012; Birley, 2011; Scott-Samuel *et al.*, 2001). A consensus exists on the purpose of scoping, but the procedure depends on the purpose and type of HIA. Subsequently,

researchers have designed several scoping tools (Birley, 2011; Human Impact Partners, 2011; Bhatia *et al.*, 2014). The overarching approach depends on views and feedback from stakeholders' engagements and reviews of documented evidence from the literature. The actual assessment procedure is the next step that follows the scoping exercise, and it seeks to put into effect the product of the scoping exercise by collating and using available evidence to appraise all health impacts of the proposal on health determinants (Scott-Samuel *et al.*, 2001). The appraisal is achieved by scientifically assessing the scale, the probability of occurrence, the timing, and the distribution of potential health impacts amongst various population groups (Scott-Samuel *et al.*, 2001). Subsequent steps of developing recommendations and reporting the results follow the assessment exercise before the final implementation stage, monitoring, and evaluation.

7.2.3 The State of HIA Practice in Nigeria and the Need to Strengthen its Incorporation

A SWOT analysis of HIA practice in Nigeria conducted by Chilaka and Ndioho (2019) highlighted the strengths of HIA practice, including increasing international acceptance, cheerful disposition of respondents, willingness to know about HIA and its application, and its association with EIA. However, stakeholders in the region still need to capitalise on the identified strengths to improve the level of HIA practice. Current results show that HIA is only practised within the confines of EIA in the region. All the respondents in study four asserted that they were unaware of the practice of a stand-alone HIA. An independent HIA (HIA not incorporated in EIA) was not also discovered during the research literature search, although there is literature on HIA practice and its processes and evaluations (Abah, 2012; Chilaka and Ndioho, 2015; Chilaka and Ndioho, 2019; Raimi, 2020). This research and other research outcomes (Raimi, 2020) have shown that practitioners rarely carry out stand-alone HIAs in the region. HIA practice is mostly limited to major projects that attract the legally required EIA process.

The detailed assessment of the health impacts of government programmes and policies and the health impacts of smaller projects remain optional and, as such, are not mainly carried out through the HIA process. This is due to the need for adequate legislative tools and the contextual administrative ambiguities and overlaps identified

in its implementation. There needs to be an adequate legislative framework for incorporating HIA in government programmes and policies. This finding is consistent with the views of Thondoo and Gupta (2021: 111), who identified the "lack of HIA legislation in developing countries as a major barrier to the advancement of" HIA practice in developing countries. The WHO recommendation for a five-step process for conducting a standard HIA (WHO. 2022) still needs to be fully imbibed within the region, and no emphatic guide has been made for HIA implementation in policies and programmes. The only available policy guide is the National EIA guidelines, which are empowered by the EIA Act of 1992. This situation is fundamentally unsustainable in an increasingly globalised world where sustainability is the global driving goal. Agrarian communities such as those within the Niger Delta regions are particularly susceptible to environmental degradation, especially when combined with the prevalence of decades-long oil explorative activities. The effects of climate change and the devastating impact of environmental degradation resulting from oil exploration and other industrial activities mean that rural dwellers are increasingly exposed to adverse health and socioeconomic conditions. Increased HIA implementation in the region can help the region to benefit from the crucial positive outcomes of HIA. It can also prevent the tendency to build infrastructures that threaten health, thereby averting the negative health and socioeconomic consequences of adverse impacts from poorly construed policies and programmes.

Conclusively, HIA in Nigeria is mainly conducted as part of the environmental Impact assessment process. This means that it is mainly conducted on major projects that meet the requirements for conducting an EIA. More details of the practice are contained in section 6.3.

7.2.3.1 Integrating HIA in EIA: Key Issues Noted.

In Study 2, which involved the review of HIA guides, 66% of reviewed documents suggested the integration of HIA with other impact assessment studies (Metro-Vancouver and EcoPlan, 2015). This means the trend towards a more integrated approach to impact assessment is rooted in literature (Raimi, 2020; Thondoo and Gupta, 2021). With this increasing trend towards a more integrated approach comes the need to ensure that health concerns are preserved and prioritised as they get interwoven with other impact assessments. HIA and EIA, as well as other impact

assessments, share similar steps and procedures, making it easier to marry these approaches together. Various research studies have tried to combine these steps, and the formation of a consensus on unified steps for integrated impact assessment is still up for further discussion. From the guides reviewed in study two, a consensus exists on the common factors and values necessary for HIA. These are mainly the values and principles of democracy, equity, sustainable development, ethical evidence use, and comprehensive health approach. Therefore, the requirements for a standardised HIA should incorporate these shared values and principles. In addition, there was a consensus on the general methodological approach to HIA. Any framework for standardisation must recognise and incorporate this approach. Attached as Appendix H is a concise checklist of requirements for a standardised HIA, which could be used to assess compliance with HIA requirements or the level of coverage of health concerns (quality) within a stand-alone HIA or an integrated Impact Assessment document.

The results from Study 3, which evaluated EIA reports in Nigeria, showed that all the reviewed reports included HIA. As stated earlier, the results from this study showed that HIA in Nigeria is mainly practised under the regulatory guidelines of environmental impact assessment, as there was no identification of any HIA conducted outside a formal EIA process. The focus of Study 3 was to check the compliance of the reviewed reports with HIA standards (Appendix H) to guide the researcher's opinion on the level of health coverage in EIAs within the region. The results showed some level of compliance with most values of HIA, such as the comprehensive approach to health, ethical use of evidence, democracy, sustainable development, and equity. Some compliance levels align with the call for an improved drive towards strengthening available instruments (such as the legal framework and guidance tools) to benefit existing inherent compatibilities.

Despite the notably significant level of compliance with HIA requirements (regarding values and methodology), the reviewed documents in Study 3 and, by extension, the Nigerian EIA reports showed many areas in the coverage of health issues that needed improvement. The identified limitations were consistent with the need for a proper legislative framework for health integration in EIA. Impacts on environmental factors were not directed or linked to the resulting health consequences. For example, impacts

such as an increase in population were not linked to the health consequences of such an increase. These findings aligned with previous studies from Thondoo and Gupta (2021:109), who stated that health risks are inadequately covered in EIA and that EIA reports and "rarely consider health impacts generated by social and economic determinants". This inadequate coverage could be due to a need for more trained personnel and the non-existence of relevant legal and legislative frameworks that will facilitate the development of proper guidance tools (Davies and Sadler, 1997). Given that the overarching legal framework for the practice of EIA is the EIA Act of 1992, the focus for resources and know-how to mitigate impacts is naturally on the biophysical or environmental consequences. The study further showed that recommended mitigations focused on addressing the effects on the biophysical environment and economic compensations to community participants to avoid conflict. This brings to the fore the role of conflicts in policy implementation within the region. Policy decisions place political considerations at the forefront of the implementation strategy to satisfy warring factions and political interests. Given the community dwellers' low education, poverty, and awareness levels, their motivation may be away from direct health-related compensations. Their influence in totally directing mitigation approaches without the needed reference to standards and guides may often lead to faulty prioritisation to the detriment of health-related concerns. Kim *et al.* (2007) and Steinemann (2000) identify non-prioritisation of health issues as detrimental to the practice of HIA.

Further review of the reports in Study 3 showed that Equity considerations failed to include consideration for impact distribution amongst the various population groups. Although different vulnerable groups were identified in some baseline data, there was no detailed exposition on impact distribution patterns. It failed to identify impact distribution on different population groups. The mitigation measures were not specific in this regard either. Equity and health equality are critical considerations in health impact assessment, which should be incorporated into the integrated EIA/HIA process to enhance the quality of the reports. The core values of HIA identify equity as a significant principle of HIA (Birley, 2013; Gulis *et al.*, 2012). The non-specificity of impact distribution patterns means that vulnerable population groups cannot be identified for targeted mitigation implementation and intervention. This further

highlights the interlinkages between process, policy implementation successes and outcomes.

Another essential principle of HIA that was conspicuously lacking or not adequately highlighted in the reviewed reports was the value of democracy. Although the approaches recommend adequate representation, the composition of the EIA team lacked relevant health or HIA expertise. Most identified lapses in the report could have been avoided if the team had experienced HIA experts. HIA has increasingly advanced its practice and theory globally, so practitioners need to be on par with the trend. Including medical or health personnel who have not acquired adequate training in HIA practice may not suffice. This brings to the fore the need to overcome the challenges posed by a lack of resources and trained personnel (Chilaka and Ndioho, 2019). Another indication of inadequate considerations given to basic HIA principles and values was the report's inadequate presentation of sustainability. Sustainable development is currently a global phenomenon, given the UN's sustainable development goals and the 2030 Agenda Partnership Accelerator Initiative (UN, 2021). Discussions on sustainability within the reports reviewed should have addressed sustainability in the proper context of ensuring the continued safety and security of the environment and human health. It was rather focused on the continued sustainability of project operations. Although the practice of EIA inherently enhances sustainable development, report presenters did not document areas where measures were taken to enhance environmental sustainability and its interrelationship with health or health outcomes.

Methodological issues concerning the level of background data, screening, and scoping were also identified. In standard HIA practice, this would violate the minimum standard requirements for HIA practice (Bhatia *et al.*, 2010). Screening is essential in standard HIA practice. The selection of projects based on the EIA selection guide listed in Table 3.6 does not give preference to health issues. Many projects that may not be classed as significant based on the EIA criteria may negatively impact population health. This calls for broadening the threshold to allow for other smaller projects to be screened, as most projects that are not considered major or do not fall within the required EIA threshold may still significantly impact human health or the environment. The lack of screening and fixation on projects with significant impacts

disallow the inclusion of programmes and policies. The standards and procedures for scoping were not standardised, as most reports left out vital points. In strengthening the guidance documents, emphasis should be placed on the duration of report preparation, areas of potential impact, impacts/ impact mitigation during the operational stage of the project and the need for periodic review, etc.

Other areas of concern are the EMP and monitoring procedures, the national and local legal frameworks, and the lack of a national structural framework or guide for integrating other impact assessments in EIA. A relevant legal framework with requirements for health integration is needed to allow room for the involvement of relevant health institutions and departments in impact assessment. Mitigation requirements, personnel, and budget required for auditing were presented in the EMP plans, which were traditionally designed to address environmental concerns. There was no health management plan that could include measurement of crucial health indexes and health outcomes during project implementation (operational stage).

The process of health integration has been widely adopted in the EIA process in Nigeria, but its implementation requires continued evaluation and improvement. Although the Nigerian national government does not have a structural framework for integrated impact assessment or integrating health in EIA, most multinational corporations and international organisations operating in the country have adopted the process of integrating HIA in EIA. The lack of a national structural framework has posed some challenges to the practice in the country.

Practically (as reflected in Study 3), many overlaps occur when carrying out the processes of background data generation and impact assessment. These overlaps require integration for consistency. The ACM module illustrated in Figure 3.5 can help address overlapping and ambiguous issues when conducting case-by-case impact evaluations. Most biophysical background data, such as water quality, noise pollution level, air quality, etc., are also relevant to the health team. The duplication of researching each overlapping item by an independent team could be wasteful, and the risk of relying on data from one team without fully embedding the expertise and needs of other teams while generating that data can also challenge the quality of output. These issues could be resolved by adopting a national framework for integrating health in EIA. Data management via the integrated approach allows each

team to tap into the rich resources and expertise of the other team. The complexity of harmonising results from conceptually independent teams to produce an EMP is also made possible by the enormous resources available via an integrated process.

As stated in the results section, the mitigations are summarised and produced as an Environmental Management Plan (EMP) in line with the National EIA guidelines. These contain harmonised details of plans, procedures and resources for the implementation and monitoring of the recommended mitigations.

7.2.3.2 HIA in EIA in Nigeria: Level of Health Coverage and Challenges to Health Incorporation

As shown in the outcome of Study 3, the degree to which health considerations are integrated into the process varies. More than half of the respondents in Study 4 (Table 6.3) believed that health considerations are not adequately integrated in most EIA. Even respondents who asserted that health issues were adequately covered also accepted that other practitioners are not complying with standards, hence not producing adequate health coverage. They only make personal claims of their ability to comply and fully incorporate health issues. Although this research ideologically entertains their ability to detach themselves from their responses and present objective facts, the inherent bias and limitation of self-appraisal may influence their judgement when assessing personal performance.

In general, various reasons contributed to the inadequate level of health coverage. These reasons, which were highlighted in Section 6.2.3.3, include the lack of an adequate database, budgetary imbalance, and misconceptions about what constitutes health impacts. Other factors that may influence the level of health coverage include the need for more expertise from participating consultants, inadequate health sector representation, the culture of prioritising environmental and social impacts, and human capital/finance. As stated by some respondents in Study 4 (e.g., respondent N13), the origin and background of EIA in the region are mainly biophysically inclined, and it will take much enlightenment for other impacts to be equally emphasised during impact assessment. It is important to note that most respondents in study four acknowledged the importance of considering the health component of impact assessment. Some respondents (Respondent J10) stated that most communities are beginning to

emphasise health concerns instead of the regular agitation for immediate financial compensation. Such emphasis is equally essential to note. Most community participants (Respondent C03) were able to identify some salient health impacts that could emanate from the proposed project in which they participated. Such emphasis on health gives credence to their level of health awareness. However, the constraint of inadequate health sector representation (considering the level and quality of HIA expertise in the team) and the level of community involvement significantly hampers the progress that could arise from increasing awareness of health needs. Raimi (2020) highlighted the challenge of methodological design and linked it to the level of expertise involved. Iglesias-Merchan and Domínguez-Ares (2020) identified a similar constraint about health integration in EIA in Spain. They questioned the interrelationship between theory and practice about public participation. He stated that:

In practice, public participation is often reduced to an administrative formality to solve a requirement to offer potentially affected people information instead of a substantive process to involve the public concerned in environmental decision-making (Iglesias-Merchan and Domínguez-Ares, 2020: 301).

This assertion aligns with our respondents' experiences in Study 4 and could have been the case about the review of the FUIO EIA report. It is easy to extrapolate that public participation has gradually been reduced to a "tick box exercise" where practitioners present evidence to get EIA approvals. However, evidence from increasing knowledge of participants and their motivation to participate proves that public participation could be made more productive if adequate resources and education are made available. The education level of participants on the needs and requirements for public participation is considered low, given the few misconceptions identified in the research. The intricate relationship between various components of the HIA practice is such that one setback in one component may affect the other and vice versa. In this case, public participation is intrinsically interrelated with the level of health coverage.

The processes involved in health integration involved the inauguration of a distinct team of assessors that handle the health impact assessment part of the EIA process. From the results of Study 4, the consultant for health assessment is commissioned

independently but mandated to work with a lead EIA expert who oversees the overall EIA process. In some cases, the lead consultant may also be a health expert. Currently, the field is dominated by experts with EIA or environmental backgrounds. This presents an inherently biased position for health integration. The research identified budget imbalance as one of the setbacks to health integration. Some practitioners in charge of the health component pointed out that practitioners prioritise biophysical issues during the debate for budget proposals. There needs to be a standard regarding the health consultant's level of involvement in the overall process. So, while some project proponents may involve the health consultant from the project's onset (right from the screening and scoping stage), others may involve them later after completing the terms of reference and critical planning stages. The results show an overwhelming support for the holistic involvement of the health consultant throughout all stages of the EIA process. The process indicates that health consultants are actively involved in gathering and processing data through the various stages of the EIA process (Figure 5.5).

A setback to the integration process and, by extension, the level of health coverage would be managing conflicting interests during the impact assessment process. As seen in the results from study four, the effect of conflict of interest was insignificant as most practitioners stated that they are commissioned independently and have certain levels of freedom to carry out their study independently. However, the overlaps in specific data management and assessment are reduced due to collaborative communication and interactions provided by the integration process. The involvement of different specialist teams enhances an in-depth review of issues and strengthens the overall data analysis process.

7.2.3.3 Challenges to Health Coverage and Integration in EIA

Section 6.2.3.3 enumerates many concerns following the results from Study 3. The challenges for health integration in EIA could deduced from these identified concerns and many other factors identified in the results of Study 4. These challenges include the need for an integrated national and local framework, lack of expert personnel, adequate health database and infrastructure, lack of national structural framework or guide on methodological approaches, and lack of public health sector involvement and culture of prioritising the biophysical component.

A significant challenge is the need for an integrated legal framework at both national and local levels. The EIA Act of 1992 provides the primary legal instrument for the current national and local legal frameworks. The Federal Ministry of Environment and other environmentally related agencies, such as the Nigerian Upstream Petroleum Regulatory Commission (NUPRC), are mandated to operate or regulate to the exclusion of health institutions. The EIA Act still needs to be updated to include HIA. However, HIA is currently being integrated into EIA without the benefit of a regulatory legal framework, although the agencies in charge of its implementation have developed guidelines incorporating health impacts. Certain operators rely on internationally accepted legal frameworks from international organisations such as the WHO, the World Bank, and the International Finance Corporation (IFC). In practice, its enforcement is mostly strengthened when these international organisations require strict adherence to their guidelines as a precondition for funding. The role of legislative framework in health integration in developing countries was highlighted by Thondoo and Gupta (2021: 111) when they stated that "...the lack of HIA legislation in developing countries is a major barrier to the advancement of the field... the presence of national legislation can boost HIA practice and lead to successful regulation of HIA implementation".

Dannenberg (2016) and Erlanger *et al.* (2008) also emphasised the role of national framework and adequate legislative framework in enhancing HIA and policy implementation. The existence of a national guideline that coherently explains the suitable approaches for integrating socioeconomic and health impacts within EIA could facilitate the practice of HIA (Kwiatowski and Ooi, 2003). This is in line with the proposition that good regulation/legislation can positively encourage HIA practices, as development proponents are mainly motivated (to conduct EIA) because of the fear of adverse publicity and litigation (Steinemann, 2000; Abah, 2012; Chilaka and Ndioho, 2015). Most concerns identified earlier in section 6.2.3.3 could have been addressed or reduced if there was an operational national legal framework to mandate health integration and help establish the needed consciousness amongst all stakeholders. The latter assertion is justifiable because research has shown that the need to comply with regulations, fear of litigation, and bad publicity are major driving factors in the conduct of HIA and EIA (Chilaka and Ndioho, 2015).

The level of expertise of practitioners is also identified as a constraint based on the results gathered. Although the practice of HIA is quite established in developed nations, most developing nations are still being challenged by a lack of adequately trained personnel in HIA and impact assessment in general. The lack of adequate expertise and capacity can lead to the non-inclusion of health personnel in critical stages of the EIA process, as observed in the reviewed report in Study 3. The challenge of lack of human and institutional capacity to conduct HIA has been a longstanding challenge within the HIA sector, although most developed countries have been able to improve their human capital gradually (Erlanger *et al.*, 2008; Birley, 2011; Green *et al.*, 2021). As previously stated, the impact assessment sector in Nigeria is dominated by expertise in EIA practice. HIA experts are gradually finding a route into the sector, and such a gradual process must be followed by adequate alignment with international best practices. The respondents in Study 4 noted this as a concern, and it was further highlighted by the misconceptions identified among EIA practitioners. A national programme that creates awareness, training, and capacity development can help ameliorate the status quo. Improving human capacity via training and awareness creation could reduce the misconceptions noted by respondents in study four.

Background health information provides the background data for impact assessment. The absence of vital health data within the communities poses a challenge to health assessment and integration because background health information provides the background data for impact assessment. Practitioners may need to work harder to generate primary baseline data that could have been easily obtained if sufficient healthcare facilities had readily available standard health records. The study area for Study 4 was a deprived rural community, typical of most host communities in the region. The level of health infrastructure available for public use was abysmally low. Community dwellers still patronised traditional medical practitioners who lack proper documentation. The government's proactive investment in health and healthcare could help redress this challenge.

The lack of a national structural framework or guide on methodological approaches is also a significant challenge for health coverage in the region. As stated earlier, integrating health in EIA has long been advocated (Birely *et al.*, 1998; Bhatia and Wernham, 2008). Some developed countries, such as Canada and the United

Kingdom, have developed guidelines for integrating health and other aspects of impact assessment into the traditional EIA protocol. However, the approaches and processes of integration are still evolving globally. The complexities of choosing an appropriate methodology for integration have increased because of the contextuality of individual cases and regions. This brings to the fore the need for a national framework or guide on appropriate methodological approaches. Given the non-inclusion of HIA in the existing EIA legal framework, there is a lack of national policy on appropriate methodology or guide for integration.

As stated earlier, the impact assessment process is rooted in the environment or biophysical aspect of impact assessment. Although this is attributed to the origin of impact assessment practice, as acknowledged by respondent J10 in Study 4, it has continued to influence the composition of IIA stakeholders. The health sector and most health institutions are focused mainly on the clinical approach to healthcare and disease control (Abah, 2014). Public health institutions are not mainly involved in the impact assessment process. This was noted in the result section. There is a concentration of primarily environmental experts in the impact assessment process in the country. There is also a reliance on mostly environmentally related federal institutions in the operation and regulation of impact assessment. These factors have created a culture of unintended bias and subject ignorance towards the integration of HIA in the EIA protocol. This was noticeable via some misconceptions, even among practitioners.

Some challenges that affected the entire impact assessment process and are not particularly peculiar to health integrated are also important to note. These challenges were noted in Study 4 and were highlighted in the results section under themes A1 and A2. They can hinder the coverage of health in integrated impact assessment. These include corruption and malpractices, societal restiveness, inaccessibility due to challenging terrain, and a history of non-implementation of recommendations. Other challenges also identified include duplication of responsibilities, lack of participants' appetite due to lack of trust in governance, poor funding structure, high cost of carrying out the EIA, lack of strong regulations and inconsistency in regulatory guidance. Also identified as constraints are the reluctance of government bodies to carry out EIA on their projects, project/IIA timeframe, and lack of continuity by successive governments

or project delay/abandonment. Challenges or factors affecting all components of the EIA process are presented in Table 6.2 and discussed further in Section 7.3.

7.3 Assessing IIA Practice and its Challenges.

In Nigeria, the IIA practice (integrating all impacts) is mainly covered under the EIA Practice. However, some stakeholders have tried to change the nomenclature to incorporate other impact assessments. Most practitioners refer to the process as Environmental Social and Health Impact Assessment (ESHIA), while others still refer to it as the EIA. Like many other forms of impact assessment, the practice of EIA has evolved from the initial formative stage to a more standardised one. However, there are still lots of unresolved challenges. As shown from the outcome of Studies 3 and 4, the EIA process in Nigeria starts with submitting a brief project description by the project proponent or its representative (EIA consultant in most cases) to the regulatory authority (FMoE or the NUPRC). The overall approach described by respondents in Study 4 aligned with the approach summarised in the results from Study 3 and is consistent with the available literature (see Figure 6.2). Given the significant potential impact, the regulatory authority is responsible for analysing the project summary and deciding whether EIA is needed. This analysis is done in compliance with the screening guidelines for such projects. This stage is called the screening stage of the EIA exercise.

Before the next stage, after the screening stage, some advocacy and awareness creation exercises are conducted (via mass media, e.g., newspapers, electronic media, etc.). It aims to inform the public about the decision to proceed with the EIA. This is necessary to enhance the participation of all interested parties (residents and other stakeholders). The input from this public engagement is necessary for making the final decision on the necessity of a full-scale EIA report. The next stage of the EIA process is the scoping stage, which involves deciding the scope of the entire EIA. The depth of the EIA and the potential impacts to be analysed are also identified at this stage. Decisions on the overall methodology to be used, as well as the possible alternatives and mitigative approaches, are also made at this stage. Agreement on the structure, content and specifics of the final report is also made at this stage. This stage is completed by producing a scoping report (EIA scope draft report), which is subsequently submitted to the regulatory authority to analyse and provide feedback.

A public consultation and advocacy phase parallels the scoping stage via a scoping workshop. Participants are encouraged to give their input or attend scheduled consultations. A scoping report is generated at the end of the scoping exercise.

The overall assessment of potential impacts closely accompanies the scoping stage. It starts with compiling detailed baseline data that will help determine the initial environmental conditions. The assessment process (using methods identified during the scoping stage) commences after the comprehensive coalition of all baseline information. Impact assessors often use various methods (qualitative and quantitative). A general approach to the assessment stage is shown in the results of Study 3 in Figure 5.5. A report is prepared at the end of the assessment process and subjected to rigorous review. The initial review involves a process where stakeholders and community members are expected to view, scrutinise, and critique. It aligns with the provisions of the EIA Act (Section 25), and a public display of information concerning the draft report and the EIA usually accompanies it. Members of the public and all stakeholders are invited to send in relevant inputs. A notice is expected (by law) to be on display for a 21-working-day period in strategic areas. This is a mandatory requirement aimed at ensuring the creation of sufficient public awareness. The medium through which the public display is done depends on the type and scale of the project.

An internal panel of reviewers are then mandated to review the completed report and harmonise all inputs before submitting it to the regulatory authority for authorisation or approval. An external panel of reviewers (set up by the FMoE) reviews the report in consultation with stakeholders and takes into consideration all comments received from the public. The final decision on the EIA comes after the review processes.

7.3.1 The Process: When, How, and by Whom?

Impact assessment in Nigeria is mainly practised under the legal authority of the EIA law. This requires EIA to be conducted whenever the proposed project or activity may cause significant environmental impact (FMGN, 1992). So, EIAs are required on both government and private projects. They are expected to be done prospectively and mainly sponsored by the project proponents. Projects are categorised into categories 1, 2, and 3 based on the significance of their potential impacts on the environment.

The moral obligation for project proponents to carry out EIAs without due diligence from regulatory bodies was greatly challenged by the attitude of government leaders towards commissioning EIAs on government projects. The project proponent kickstarts the process by informing the Federal Ministry of Environment of their intent and paying the stipulated fees for registration of their intent. This is quickly followed by an environmental screening and coping exercise to produce the TOR, which is subsequently submitted to the ministry for approval. On approval of the TOR, subsequent steps of the EIA process are then carried out, as explained in the first part of section 7.3 above.

Of concern is the fact that most proponents of government projects do not often comply even when their projects pass the required minimum threshold. Also of concern is that the EIA funding process relies heavily on the compliance of independent project proponents. Respondents in Study 4 had raised concerns about instances where it seemed the regulating bodies were focussing on income generation as a primary objective rather than using it as a tool to restore compliance. These issues brought to the fore the need to overhaul the principal legal framework in order to accommodate newer procedural and funding reforms.

Although there is increased awareness of the need for EIA, the increased awareness is attributed to the increasing environmental consequences of projects. Persistent environmental degradation has led to catastrophic health and environmental incidences in the region. This has made more people interested in the impacts that may have caused these environmental degradations. However, the increased level of awareness has not translated to increased efficiency in the process, as most respondents stated that proponents are driven mainly by the desire to fulfil the legal requirement, hence turning the process into just another tick-box exercise. The increased awareness (mainly amongst the community dwellers) is also driven by the desire to benefit from the process by gaining from any potential economic compensation. This was shown in the lack of follow-up beyond the stage of community engagement, where potential beneficiaries are compensated. This brings to the fore the need for proper education for both community dwellers and practitioners. Stakeholders involved in the EIA process include the project proponents and their representatives, the regulators and their representatives, the community dwellers and

their representatives and the independent Consultants and their representatives. Others include consulting firms and their representatives, NGOs and other interested parties, e.g., unions of practitioners, academic researchers, donor agencies, etc. Government representatives (federal, state, and local) also form a significant part of the stakeholder's forum as they play the all-important role in monitoring and ensuring compliance.

7.3.2 Financing the EIA/IIA Practice

The project proponents mainly fund the impact assessment process in Nigeria. The role of other stakeholders, such as international donor agencies, in funding and awareness creation has been widely studied in the literature. These agencies have contributed immensely to improving the country's EIA practice. However, the sharing of operational financial burden has received very little insight. Most respondents in Study 4 expressed their displeasure over the increasing cost of carrying out an impact assessment. Further enquiries have shown that the increasing cost of carrying out impact assessments could be partly attributed to charges (not penalties) from the regulators. Although the official administrative fee remains stable at about fifty thousand naira (#50,000), other illegal charges (e.g., bribe, commission, youths levy, etc.) are foisted on project proponents. The regulatory agencies rely primarily on project proponents' charges to fund their operations. It is believed that if the cost of carrying out EIA is reduced to manageable levels, more proponents would be more forthright in commissioning EIAs. Many costs-benefit analyses conducted on the EIA process have shown that the financial effects of not carrying out EIA far outweigh the cost of carrying it out (Hundloe *et al.*, 1990; Atkinson and Cooke, 2005; O'Reilly *et al.*, 2006; Dannenberg, 2016; Iglesias-Merchan and Domínguez-Ares, 2020).

Respondent J10 used the expression, "he who pays the piper detects the tune," to explain the implication of project proponents exclusively funding the EIA process. He reiterated that project proponents pay so much to get the regulators out to the field to monitor the process. He stated that the influence of money or financial incentives can encourage evil or corrupt practices as proponents may try to influence the process. Project proponents should focus on paying the consultants and other personnel who are contracted to assess while also providing them with all they need to carry out their duties. The government should find alternative avenues of funding for regulatory

agencies. Alternative funding is needed to make the cost of the exercise less burdensome for project proponents. In general, the tendency of the government to turn the EIA process into a channel for income generation should be discouraged. Otherwise, it will reduce the quality of impact assessments produced and drive practitioners and EIA proponents towards finding alternative means of cutting costs. It will also distract the government's focus from ensuring that practitioners adhere to global best practices.

7.3.3 Regulatory Frameworks

National policies, legislations, and standards govern the Nigerian impact assessment practice. Adherence to these administrative and legal frameworks encourages the strict implementation of all projects in line with state, national and international standards. The relevance of these legislative guides or regulations to individual projects depends on the type of project and the type of potential impact that each project may emit. Appendix I contains a list of legal and regulatory frameworks referenced in the EIA reports reviewed in Study 3. As can be seen in the plethora of regulatory frameworks listed in Appendix I, many agencies are involved in the EIA process. A streamlined but comprehensive regulatory framework that divides roles and responsibilities within the sector is lacking. This opens the space for overlaps and conflict among competing players. Although the FMoH assumes the overall responsibility for the EIA process in the country, other players like states, local government, and other relevant agencies also have their level of influence and control. This is more pronounced within the oil and gas sector. The persistent conflict between The FMoE and the defunct DPR has attracted criticism from various stakeholders (Olokesusi, 2008; Ibrahim *et al.*, 2020; Onuora and Nnubia, 2021). Respondents from Study 4 stated that they are still required to comply with the requirements of both regulators and submit separate reports to each regulator. This, they believed, has posed some challenges to the EIA process, including the financial resources and time requirements needed to meet both demands.

The legal mandate for EIA practice in the country is incorporated in the Environmental Impact Assessment Decree No. 86 of 1992 (EIA Act of 1992) and its corresponding Environmental Impact Assessment guidelines developed by the Federal Ministry of

Environment under the EIA Act. The Act and its corresponding guidelines have explicit information on the required processes, methods, and actions of The EIA process. The guidelines also set out the criteria for categorising projects to ascertain those that require EIA. At the national level, even though the EIA Act of 1992 provides overarching control, other national regulatory Acts/Decrees also influence and form what could be called a collective national regulatory framework. This is because most activities that require EIA also fall under the radar of other federal laws. For instance, a company that produces effluents or harmful waste material would need an EIA to assess its proposed operations and how it intends to manage its waste. While the conduct of the EIA relies on the EIA Act of 1992 as a guide, it will also need to meet the requirements of the Harmful Waste (Special Criminal Provisions) Act (Cap H1 LFN 2004). The EIAs evaluated in Study 3 showed evidence of compliance with various national and state legislations that influence the activities they were involved with.

Apart from providing the regulatory framework, the Federal Ministry of Environment also has the overall administrative responsibility of administering and enforcing the provisions of the Act about the EIA process. Apart from the Federal Ministry of Environment, other agencies complement their effort by providing regulatory functions. Appendix I contains key agencies with regulatory functions in EIA practice. The National Environmental Standards and Regulations Enforcement Agency (NESREA) is one of the national agencies that regulate the EIA process. The regulatory functions are mainly conducted through inspection, compliance monitoring, negotiation, legal action, and prosecution. Other agencies, such as the National Oil Spill Detection and Response Agency (NOSDRA), also use similar approaches to perform their functions when issues of oil spills are involved. In general, this role of overseeing the process is often complemented by the activities of other agencies and levels of government. State governments have been captured in most of the reviewed reports to have some level of regulatory influences leading to enacting certain state legislations to control the process. Although this is plausible, it has often led to conflicts and ambiguities. This leads us to discuss the challenges posed by the current regulatory procedure.

7.3.4 Regulatory Challenges

The current EIA regulatory framework has been faced with several challenges since its inception. The existence of the Land Use Act, which was promulgated in 1978, has

been criticised as a constraint to the EIA system (Olokesusi, 1998; Yahaya, 2019). The uniform land tenure system, which came into effect via the Land Use Act of 1978, was primarily designed to make it easier for government at all levels to have access to land for the purposes of development. However, this has added to the tensions in the Niger Delta. The rights of community dwellers have been infringed by unfair practices and land grabbing, resulting in unfriendly relationships, which is detrimental to the peaceful execution of EIA engagements.

Outside the setbacks from other pieces of legislation, the regulatory framework, which relies on the EIA Act of 1992, has also been criticised for its lack of clarity, laxity on penalties, and tendency to be open to conflict and ambiguity (Ibrahim, 2020). Olokesusi (1998) pointed out that most industry players abuse the exclusion clause without any consequences. The exclusion clause in this regard refers to the provision (EIA Act of 1992, part 2) for cases where EIA may not be required. Olokesusi (1998: 171) stated that "some observers have criticised the decree's language for its obscurity and poor grammar". While the guidelines have been reviewed over time, the primary Act has not been amended or changed. Some respondents in Study 4 called for the amendment of the EIA Act to reflect contemporary issues and concerns. For instance, Respondent J10 joked that some project proponents might intentionally flout the EIA law and prefer to pay the fine as the fine may be cheaper than the cost of carrying out an ideal EIA. Another area of criticism of the regulatory process is the reactive nature of the EIA legislation. The Act does not give clear directives for project proponents to consider locations based on optimal socioeconomic, health, environmental, or political considerations. The EIA process comes into effect after notice of the project has been given. This comes after the preliminary processes of location planning and delineation. Therefore, the option of considering alternative locations to minimise impact and reduce its effect on vulnerable populations is technically concluded before the actual commencement of the EIA process.

The financing of the EIA process was another issue mentioned by respondents in Study 4. The EIA Act of 1992 and its guidance do not contain appropriate safeguards that could stop the exploitation and monetisation of the process. Some practitioners raised concerns about the high cost of conducting the EIA and stated that project proponents could be persuaded to look for shortcuts, thereby compromising quality.

The role of state and local governments in enforcing EIA implementation has been debated (Ibrahim, 2020). Most states in the Niger Delta region have put in place state legislations that seek to oversee the EIA process within their region. However, these legislations all come under the National EIA framework and are expected to be complementary to federal legislations which empower the actions of the Federal Ministry of Environment. It could be argued that the position of the state and local governments as project hosts puts them in the position to understand the context surrounding the operations of the proposed project. This brings to the fore the considerations in the ACM implementation framework discussed in chapter three. The considerations of context and understanding the role of conflict and ambiguity in policy tools help improve the outcome.

7.3.4 The Federal University Otuoke (FUO) EIA Report

The EIA report from the Federal University of Otuoke (part of study three samples) was used as a reference point for subsequent evaluation in Study 4. That informed the choice of the study area, which was the Otuoke community in Bayelsa State. The community served as the host community for the FUO EIA process. Community dwellers were included as respondents based on the sampling guidelines. Some of these community dwellers were part of the community team that participated or should have participated in the EIA when it was conducted.

The results from the interviews showed that most claims made in the report regarding the health studies or HIA component were not substantiated by the respondents. For instance, a summary of the health studies reports, as reported in the EIA, indicated that the parameters used for sampling/measurement/analysis were ...

Demographic profile of the communities, morbidity/mortality patterns, healthcare facilities, nutritional status of under-fives and the general population, maternal and child health, knowledge, attitude practice and behaviour (KAPB), and environmental health factors.

In addition, the method supposedly used in gathering the health data, as indicated in the report, was listed as "key informant interviews, focused group discussion,

administration of structured questionnaire and interviews, physical examination of volunteers, walk-through survey and collection of secondary data."

The approaches stated above would involve community members' holistic, participatory involvement. It would involve a comprehensive and broader community consultation, awareness creation, and advocacy. However, all the community participants interviewed claimed they did not follow the proper procedure for community participation. Three respondents claimed that they had no idea of any community consultation. They also claimed no idea of any open data collection from the EIA or HIA team. Given their status as significant community leaders, they claimed they should have known if there was any community engagement. One respondent, the head of personnel in the local council at that time, explained that the EIA proponent hosted a select few vocal people in the city to show them the report and sought their approval and cooperation. A paid appreciation accompanied this approval, he explained.

This discovery highlights the challenges that the practice of EIA faces in the region at large. A glowing report, approved and adjudged to be perfect, might turn out to be just another misleading and damaging piece of paperwork if the elements of sincerity, professional integrity, and strict process monitoring are not incorporated into the system.

To ascertain the veracity of the respondent's claims, the researcher contacted the University's management, who stated that they were not the officers in charge at the time of the report.

As part of the EMP in the said EIA report, section 7.2.1 of the report expressly sets out the use and maintenance policy of the EMP as follows:

The EMP shall remain a dynamic working tool and will be owned by the University. FUO Director of Works is, however, the custodian of the document and may exercise auditing role to verify compliance by the project. The EMP shall be updated and revised periodically, throughout the project's life span to incorporate improved technologies, better environmental regulations, management systems, guidelines, and policies. Constructive suggestions by

users (contractors, management, line and operating personnel) shall be assessed by the EM Team and integrated into the EMP.

The above policy required the EMP to be periodically updated and revised. Further enquiries on the state of the EMP and its implementation status did not get any positive response, as the University's spokesperson declined further comments. They did not also carry out the periodical review and update required for the EMP, as asserted by other lecturers who were unofficially available for comments.

7.3.5 General Challenges

The overall integrated impact assessment process, or the ESHIA as it is practised in Nigeria, has many challenges that affect the effective and smooth execution of impact assessments. Most of them were highlighted by respondents in Study 4 and detailed in the results chapter. The overall challenges affecting the impact assessment process in Nigeria could be discussed and summarised under the following headings.

1. Lack of Public Participation:

Public participation remains a vital component of the EIA process. It enriches and improves the quality of reports produced. However, the level of public participation in the EIA process remains a challenge despite the region's increasing and severe level of environmental degradation. Even when the increased environmental degradation has caused a slight increase in awareness and participation, the quality of participation remains a challenge. The respondents' perception of public participation in Study 4 was mainly for immediate economic benefit. Such perception affects the quality of participation. Several challenges were also seen to affect community participation. Overcoming these challenges should be the focus of our regulators. Nwoko (2013) attributed the low level of participation to people's indifference and lack of adequate information on the potential consequences of negative impacts, while Agbazue and Ehiemobi (2016) added that poverty and low literacy level of community dwellers make them view public participation in EIA as a waste of time. Respondent has highlighted these points earlier in Study 4. Added to these factors are the increasing level of insecurity and conflicts within the region and the high level of corruption and insincerity amongst the practitioners and community leaders. A refocussed enforcement drive to

ensure that the regulators follow the processes for impact assessment needs to be instituted. Other suggested approaches include institutionalising post-impact assessment briefings/engagements and creating awareness (Iglesias-Merchan and Domínguez-Ares, 2020).

2. Duplication of Responsibilities and Regulatory Conflicts

Although the overall regulatory functions for the EIA process reside with the FMoE and its agencies, other tiers of government and agencies also claim certain functions in the EIA process. In general, the existence of duplications, overlaps, and inconsistencies in EIA administration has been acknowledged by respondents in Study 4 and has been supported by existing literature (Nwoko, 2013; Agbazue and Ehiemobi, 2016; Raimi, 2020). A prominent example is the role of the recently transformed DPR (an agency under the Ministry of Petroleum) and the FMoE. Whereas the DPR was mandated to regulate projects within the petroleum and gas sector, the FMoE, through its agencies (e.g., NESREA), is responsible for regulating all sectors. Project proponents often navigate between meeting the DPR requirements and the requirements of the FMoE. Another prominently deliberated standpoint was the possible conflict between different tiers of government. The court Judgment Delivered on the 10th of Dec 2014 between Helios Towers Nigeria Limited versus NESREA and KASEPA settled the controversy. The case, instituted at the instance of NESREA, prayed the court to set aside the EIA permit issued by KASEPA (A state agency) and declare it illegal, unlawful, and void. The judgement for the case went in favour of NESREA.

Duplication of responsibilities was highlighted as a challenge by the respondents. The respondents also highlighted the multiplicity of legal and regulatory guidelines that they need to satisfy and called for more harmonisation. Concrete steps to continually resolve these overlaps should form the bases a national strategy to improve the EIA process.

3 Regulatory Challenges and Administration

The significance of the role of regulators in the administration and supervision of the EIA process must be considered. The challenge resulting from the lack of proper

execution of these responsibilities remains significant. Issues such as the lack of time due to a short project timeframe are prevalent and were highlighted by respondents. Other issues related to administrative failures by regulators include the need for continuity in the implementation of the EIA when there is a change of government (for government projects). The introduction of partisan interest (politics) and the lack of involvement of all sectors are issues that could be streamlined appropriately and addressed by the administrators. In addition to administrative failures, the nature of regulatory enforcement also affects the EIA process. Respondents suggested strong enforcement and highlighted cases where penalties were too small or too light to instil any deterrence. Reviewing the penalties and overhauling of most archaic regulatory measures would be recommended.

4 Education and Awareness Creation.

All respondents suggested that a poor level of education constitutes a constraint to the EIA process. Poor community participation and lack of understanding of the process were mostly attributed to low levels of education. Continued education on the ideals of impact assessment is necessary and recommended. The practitioners also require more education, awareness creation and retraining to keep them updated on evolving trends in the impact assessment process. This has become more important as misconception cases were identified amongst practitioners and other participants. More education is needed to eradicate the increasing incidences of professional incompetence. The quality of participation and the desire to participate significantly increase when participants are adequately educated and aware of the process. Other issues that could be addressed through increased awareness and education include cultural issues that were identified to pose as challenge to the EIA process. A culture that bars women from talking and engaging during consultation could be eradicated with adequate education.

5 Corruption and Malpractices

The possibility of the existence of insincerity, sharp practices, and fraud was suggested by respondents, as highlighted in the result chapter. Stringent monitoring and enforcement procedures could eradicate or reduce these sharp practices. Some standard sharp practices to watch out for include:

- a) Use of old and irrelevant baseline data, without going to the field to collate data:
This could be carried out by practitioners.
- b) Selection of relatives or cronies by community leaders to represent the community members. This practice, which prevents proper open consultation, is likely carried out by community leaders.
- c) Plagiarising reports without carrying out proper data collection and analysis.
This could be carried out by practitioners.
- d) Payment for approvals by project proponents through corrupt regulatory officers.

Although this research lacks evidence to prove the existence of the listed corrupt practices beyond respondents' opinion, the fact that they were suggested based on their experiences gives credence to the need for caution. Also, the outcome of enquiries about the FOU EIA report further suggests the possibility of malpractice.

6 Implementation Of Mitigation and Enforcement and The Review Process

The lack of holistic implementation of mitigation measures from previous EIAs also continues to pose a setback to the entire EIA process. The lack of a consistent post-project monitoring approach and lack of reviews of the mitigation measures during the project's lifetime also constrain the EIA process. Subsequently, more details on issues regarding implementing mitigation measures are addressed.

7 The EIA Processes: Screening, Scoping, and Reviews

Impact assessment practice in the region is still based on the defunct Federal Environmental Protection Agency (FEPA) framework, which was initially focused on the biophysical or environmental component of impact assessment. Including other components and the various changes in nomenclature would be more impactful when impact assessments are not solely on individual projects but also on programmes and policies. Veteran practitioners who volunteered as respondents in Study 4 acknowledged the fact that they have never witnessed any HIA on policy or programme. The full conceptualisation and implementation of the Strategic Environmental Assessment (SEA) and sustainability approach, which integrates EIA into strategic planning and policy-making, would help improve the process. This allows

the cumulative environmental and health effects of programmes or policies to be mitigated before those programmes are turned into projects. It would also reduce the repetitive approach of carrying out singular impact assessments on every project under the same programme or policy. Impact assessments could also be carried out before proponents attach themselves to the projects using such an approach.

The review process before approval also needs to be strengthened to ensure objectivity and rigour. Improving the review process and ensuring that the recommended review procedures are followed could prevent project proponents from incentivising the process for favourable decisions.

8 Financing, Cost and Lack of Resources

Most challenges resulting from the EIA funding procedure have been addressed in Section 6.2.3.3. The increasing cost of carrying out Impact assessments continues to threaten the quality of reports produced and due process. The state of the local communities and the resources available also contribute to the level and quality of background data that can be generated. Most respondents highlighted the lack of adequate background data as a significant challenge.

9 Quality Assurance

The poor quality of HIA reports has been an issue of concern in the region. Respondents complained that some malpractices abound in the sector. This has led to the production of reports that are bogus, encyclopaedic, and lacking clarity. Project proponents increasingly regard the impact assessment process as a 'tick-box exercise' that is meant to fulfil all righteousness. This mindset has affected their level of commitment and the number of resources they allocate for the process. This goes a long way in affecting the quality of reports produced. Addressing the challenges mentioned herein and ensuring that only competent impact assessment practitioners are licenced to practice would help enhance the quality of reports produced. It will ensure that reports produced are concise, accurate and implementable.

7.4 Implementation of Mitigation, Compensation, and other Environmental Offsets

The main essence of an EIA is to mitigate the potential impacts that projects or programmes can have on the environment and society. Achieving this goal comes by implementing the measures outlined in the EIA. Other incentives and environmental offsets often compensate for other unmitigated residual impacts. Implementing recommendations as contained in the EMP has been a global challenge to the EIA process (Marshall, 2005; Hembra and Phil-Eze, 2021)—the time and manner of implementation matters for mitigation measures to be successful. Implementing the EMP should be a continuous exercise that continues throughout the life cycle of the project or programme. This continuous implementation helps to address identified concerns throughout the project or programme's design, construction, operation, and decommissioning phases (Hembra and Phil-Eze, 2021).

The mitigation approaches outlined in the FUIO EIA report were focused mainly on the project's construction phase. Furthermore, while interviewing key stakeholders, there was no evidence of fully implementing the mitigation measures. The current operational phase of the project does not have any statutory follow-up process in line with the required standards. These identifiable setbacks are common to most EMPs in the region.

Despite the growing interest in environmental impact assessment in the region and the desire to improve the process, most practitioners and researchers have always focused on the overall process evaluation rather than evaluating the Implementation of EMPs. Evaluating implementation is a vital component of the process that should have more attention. The lack of attention leads to situations where quality EMPs are left unimplemented, a situation that renders all invested resources futile. The practitioners' responses in Study 4 unveiled an array of weaknesses in the implementation process. Generally, the respondents assessed the level of implementation of mitigation as 'low' and described some major process failures in more detail. The follow-up process must include the required follow-up principles recommended by the IAIA (Morrison-Saunders *et al.*,

2007). This research outcome aligns with similar findings from researchers within Nigeria and other African countries (Ecaat, 2004; Sampong, 2004; Tekeu, 2004; McCartney, 2010; Nwokwo, 2013; Hembra and Phil-Eze, 2021). Prominent among the setbacks was the ineffectiveness of monitoring and follow-up. Where there is ineffective monitoring, project proponents would likely be able to circumvent the process and evade penalties, which can lead to cases of outright abandonment of recommended EMPs after approval is secured.

Respondents raised the need for more educational enlightenment and enforcement of regulatory standards as a panacea for the poor implementation level. Such education could emphasise the importance of appropriate mitigation approaches and the need for stakeholders to value the mitigation phase. Appropriate orientation and education can address the culture of preferring monetary compensation over environmental offsets and the need to detach environmental preservation from monetary benefits.

The results also showed that most respondents attributed the responsibility of implementing the EMP to the project proponents. At the same time, the regulatory agencies were said to be responsible for enforcing its implementation. Effective Implementation of the EMPs is needed to attain sustainable development goals (SDG). Direct consequences of effective/ineffective Implementation of the EMPs, as highlighted by respondents, include the following:

- a) Financial cost implications: The cost-benefit advantage of enforcing implementation far outweighs its investment. The EIA is an expensive exercise; therefore, it is not financially prudent to waste it by not implementing its recommendations.
- b) Health and safety implications (cost to life): Without impact mitigations, the effects of environmental degradation on health will not be ameliorated. The safety procedures put in place via mitigation measures would not also be effective, hence the occurrence of more health and safety hazards.
- c) Corporate Image: Harmful operations cause reputational damage. Full Implementation of EMPs can improve corporate image by reducing the impact of reputational damage. In addition, compensation and environment offset measures would help establish a cordial relationship between the company and its host community.

- d) Restiveness and conflict: Effective Implementation of EMP involves maintaining equity amongst community members. Equity and transparency would lead to peaceful coexistence. Some respondents stated that injustices done to some people in the host communities (by damaging their immediate environment) could cause younger generations to become violent agitators.
- e) Productivity: Full Implementation of the EMP also allows the company to avoid distractions and focus on productivity.
- f) Building trust: Respondents argued that a simple way of building trust and restoring confidence would be to improve the implementation of mitigation, especially those aspects that directly affect the well-being of the people.

Consequently, the following approaches are proposed to improve the implementation of mitigations:

- 1) Developing a unique guidance protocol on good practice relating to mitigation measures and their enforcement.
- 2) Establishing more synergy in the relationship between the EMP and other statutory planning systems (town planners and local government development agencies). To understand and improve the interrelationship between EMP requirements and planning decisions.
- 3) Investigations and investments into implementing mitigation of EMPs in other sectors (other than petroleum and gas), such as construction, etc.
- 4) Improvement and development of improvement strategies to overcome the challenges outlined herein.

7.4.1 Regulatory Roles and Monitoring EMP Implementation.

As reflected in the result chapter (Table 5.5.3), all stakeholders have a role in the follow-up process. This is despite the fact that monitoring and enforcement of EMP implementation are primarily the responsibility of regulatory agencies and project proponents. Government agencies are often required to provide a conducive environment for the implementation of most mitigation measures, especially implementation measures that involve impact compensation.

Monitoring the Implementation of EMPs bridges the gap between the EIA preparation phase and the project implementation phase by instituting constant evaluation processes that evaluate conformance to EMP requirements (compliance monitoring and auditing) while also evaluating the performance of the EMP in controlling or eradicating impacts (effects monitoring and audit). The current EIA statutes require that the Implementation of EMPs and its ensuing concerns be monitored and evaluated during all phases of project implementation. These requirements are highlighted in various sections of the EIA Act (1992), as well as Section 11 of the EIA procedural guideline (1995)". Monitoring ensures the assessment of the proponents' commitments to the standards contained in EMP during various stages of project development. It also allows for the testing and evaluation of the effectiveness of mitigation measures and serves as a data source for future development projects. The objectives of monitoring the Implementation of EMP are as follows:

- a) To enhance the correct and appropriate implementation of mitigation measures.
- b) To Evaluate and understand the causes of environmental changes during or after various project implementation phases and to determine whether project implementation or natural occurrence causes environmental changes.
- c) To monitor all discharges resulting from the project and ensure compliance with regulatory requirements as contained in EMP.
- d) To determine process effectiveness and effectiveness of the EMP as well as the effectiveness of the monitoring strategy.
- e) To serve as a feedback mechanism for improvements in EIA and EIA-related procedures.
- f) To enhance impact profiling, which can lead to a better understanding of the nature, severity, and duration of identified impacts.
- g) To provide data sources for future development of research and evaluation tools.

Following the results of Studies 3 and 4, the current EIA practice in the region rarely reports on environmental performance as a product of adequate and accurate monitoring of EMP implementation. Respondents reported the existence of a statutory Impact Mitigation Monitoring Exercise (IMME). They, however, complained of

compromise and gross ineffectiveness in the follow-up process by regulatory authorities. The community members need more education on the importance of post-EIA activities to be interested. These failures and the unethical practices of local practitioners and project proponents lead to situations where monitoring data and reports are statutorily sent to authority to fulfil all righteousness.

In most cases, these reports do not reflect the actual situation on the ground and would therefore not contain the background explanations of how it obtained the results nor contain the basic analytical interpretations (Dias and Sánchez, 2000). Such limitation denies all parties the experiences and lessons that could come from the process and evades the transformation of such lessons into institutional learning. Consequently, records of good and bad practices cannot be systematically documented and integrated into future recommendations and requirements.

7.4.2 Challenges to Implementation of Mitigations and Monitoring

As earlier highlighted, most challenges common to EIA practice also affect mitigation, monitoring and follow-up stages. This study identified some significant challenges. Tinker *et al.* (2005:278) suggest that the "English EIA and planning systems are ineffective in ensuring the implementation of mitigation measures proposed in ESs". Their findings showed that planning conditions covered only 50% of recommended mitigations from EIA, which suggests the non-implementation of a good percentage of the recommendations. Similarly, Marshall (2001) highlighted the challenge of non-implementation of mitigation. He identified several challenges within the UK electrical transmission and distribution company, including engineers' preferences, previously taken design decisions, adopted environmental standards, implementation costs, legal requirements, operational guarantees, and public/consultee concerns. Some of these challenges are relevant to the Niger Delta region, although some are not. Sánchez and Gallardo (2005: 182) also acknowledged the challenge of non-implementation of mitigations. They suggested that a "follow-up, management system and monitoring" can be used to achieve full implementation of cost-effective mitigations.

In a developing country such as Nigeria, the level of mitigation implementation becomes even more challenging (Ibrahim, 2020; Raimi, 2020). The operational guidelines and operating manuals acknowledge the follow-up stages suggested by

Sánchez and Gallardo (2005). The enforcement of these guidelines becomes challenging, given the challenges highlighted earlier in this work. Corruption and malpractices are prominent detrimental factors undermining the process. A high level of corruption and outright insincerity, as recounted by respondents in study 4, shows that the level of compliance with these guidelines is very minimal.

Also identified as a challenge is the need for a national guidance protocol on good practice relating to mitigation measures. Although most reputable companies have their internal guide to ensure compliance with international standards, some companies and government agencies do not follow up the implementation process after the EIA approval. Another significant challenge for implementation is the low level of quality community participation. Ineffective community participation has been a challenge to the overall impact assessment process. Most respondents in Study 4 stated that this is a challenge. The increasing community awareness needs adequate education and information for community participants to know their rights and privileges. For community participation to be effective, community members should be sufficiently informed of their rights and the alternative offers they are entitled to (according to international standards) before deciding on compensation. During valuation, they should also be involved and should have a good understanding of the valuing system. Implementing mitigation becomes jeopardised when operators and regulators are open to compromise by consultants.

The current trend of the government's interest in profiteering from fines and penalties can also challenge the level of implementation. Some practitioners gave instances where more emphasis was given to penalties, thereby increasing the cost of implementation. Policy inconsistencies and role duplication are also highlighted as constraints. Other factors that might challenge the level of implementation of mitigations include the lack of strong enforcement tools and the lack of political will.

7.5 Prospects for Improving the Integrated Impact Assessment Process.

The role of impact assessment in ameliorating the impacts of environmental degradation has increasingly been embraced and appreciated over the years. The increasing impact of environmental degradation on human health has also helped

amplify the need for more action. This increased awareness has opened more opportunities for public participation and government investment. Over the years, research interests have also developed in the sector, given increased public awareness. The need for health integration in statutory EIAs has also been more accepted and appreciated. The respondents in Study 4 acknowledged increased interest in the sector. They made several suggestions for future improvements in the EIA process and health integration into the impact assessment process. Reshaping the country's approach to planning, scoping, and implementing EIAs can help produce quicker and simpler-to-use reports for better environmental and health outcomes. Incorporating sustainability standards, efficiency, effectiveness, clarity, and usability can help to reshape the country's EIA approach. Sustainability in reporting ensures the incorporation of the core values of sustainable development in the design and production of the report. The idea of sustainable development underpins the evolution of environmental and health impact assessments. Incorporating this in the design means that the report would ensure that it tailors all decisions and choices towards ensuring sustainability. Efficiency in report design ensures that the report is professionally rewarding and meets the required standard for such a document. Enshrining the quality of effectiveness in the report design will ensure the desired outcome of delivering sustainable development. Clarity and useability will ensure that the produced report is flexible for policymakers to understand and use.

Deliberate actions and steps should be taken to overcome identified challenges and set the pace for sustainable Impact assessment practice in the region. Implementation of such actions is necessary to secure the future of impact assessment in the region. Consequently, based on inputs from this research and existing literature, several points are proposed to enhance the prospect of integrated impact assessment in the region. These are:

- (i) Integration and consolidation of different assessments and Implementation of a national action plan (Section 7.6) to harmonise best practice standards and produce all-inclusive national guidelines on integration.
- (ii) Digitalisation, which involves the development and improvement of the digital EIA approach and incorporation of electronic environmental statement and

- EMP into existing planning systems (maintaining this as standard EIA approach)
- (iii) Broadening and institutionalising the screening approach. Allowing flexibility in the use of the term "likely significant effects." This phrase is used in EIAs to embrace health effects assessed to have likely significant effects. Flexibility in its use is necessary because significant effects could be contextual (depending on professional judgement and the best available evidence) and can evolve as the assessment progresses. This will give room for policies and programmes to be covered.
 - (iv) Applying a more comprehensive and holistic scoping approach to determine what should be covered and how it should be covered.
 - (v) Process development through the application of best practice principles and the latest research technology, shaping the process and simplifying assessment processes given available infrastructure.
 - (vi) Product development through focussing on prioritising the EIS and EMP. Ensure its dissemination via appropriate communication channels and engagement of professionals with adequate graphics, UX and UI designers and communication skills,
 - (vii) Effective implementation through the development of an appropriate monitoring and follow-up guide/plan. Efficient documentation and use of lessons learned.
 - (viii) Enhancing environmental outcomes by clearly defining the environmental, health, and social goals of all infrastructural developments so that impact assessments can be designed to achieve these goals.

In addition to the above prospective targets, efforts to address current challenges, as identified in this research, would also consolidate the attainment of all future environmental and health sustainability goals.

7.6 Framework and Master Plan for Improved Health Integration and Implementation of EMPs

The call for integrating social and health impacts in the EIA process in Nigeria has been well established. The results from studies three and four of this thesis fully establish that the integrated approach has come to stay in Nigeria. As used by most

industry operators, the gradual movement and changes in nomenclature from EIA and ESIA to ESHIA validate the claim that practitioners and regulators are in unison on the need for the integrated approach. An example of such a display of unison occurred in 2010 during an EIA stakeholders' workshop convened by the then minister for environment. Stakeholders emphasised and strongly advocated the integration of health concerns in EIA procedural guidelines.

Even though most stakeholders acknowledge the need for integration and subsequent advocacy, similar efforts have often failed to translate into desired practical results. The researcher believes this could be due to the need for a legal administrative framework and a holistic National approach. Although many research projects have evaluated the overall practice of EIA in Nigeria, the level of health integration has rarely been addressed. Abah (2014: 48) submitted that:

"...A key initial step towards ensuring sustainable integration of health impacts into EIA is to ensure that a guideline exists that clearly spells out the data requirements for HIA and provides procedural guide for both the conduct of the HIA and its integration into EIA."

He further suggested the establishment of a ministerial task force on HIA to develop a draft of the HIA national guideline for ministerial approval. Developing and approving the HIA national guide should be one aspect of implementing a detailed national HIA/EIA engagement action plan. This action plan should identify key contact individuals in the public health sectors with the statutory responsibilities of collaborating with industry players and other environmental ministry regulators. The Framework for developing the proposed national HIA in the EIA action plan followed the UK Medical Research Council guidelines, which recently published a new framework for developing and evaluating complex interventions (Skivington *et al.*, 2021).

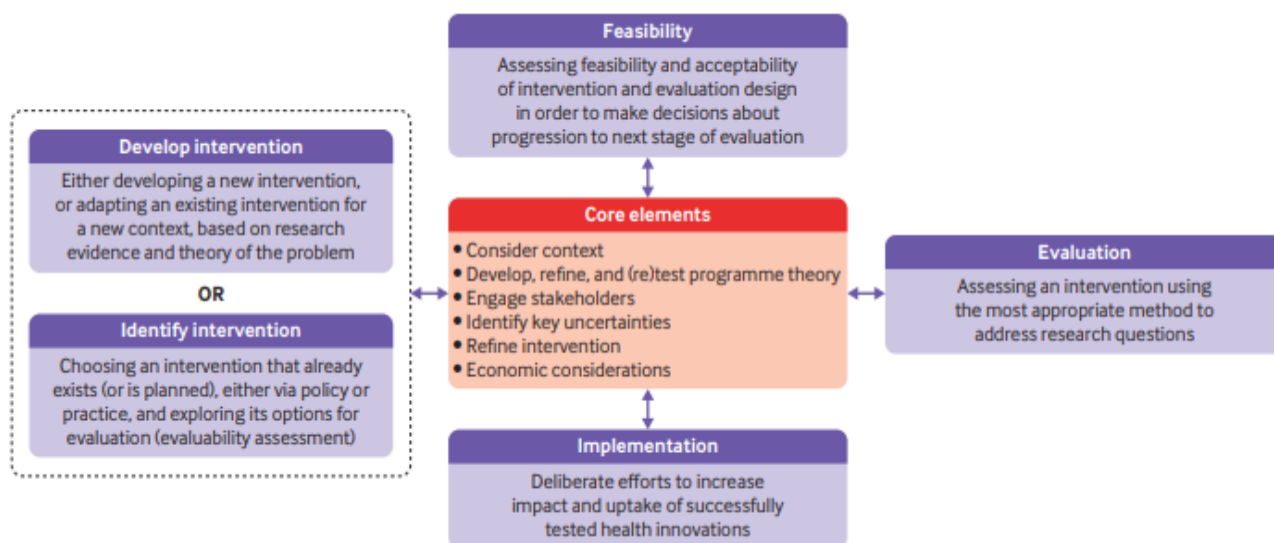


Figure 7.1: Framework for Developing and Evaluating Complex Interventions
 Source: Skivington *et al.*, 2021

7.6.1 Framework Design

Following the guidelines of the UK Medical Research Council (Skivington *et al.*, 2021), the Framework takes root from the current EIA and EIA implementation strategy in the country and the current Federal, State, and Local Government governing system. The Framework identifies the proposed development of a national HIA in EIA action plan as an intervention strategy. It uses the recommended stages from Skivington *et al.* (2021) to propose a master plan. The Framework is a conceptual framework. Its conceptualisation uses information generated from research data analysis and supported by literature-related theories. The design of the Framework follows the stages in Figure 7.1. The subsequent subheads shall explain the framework design stages as Skivington *et al.* (2021) recommended.

7.6.1.1 Develop or Identify Intervention

As stated earlier, the Framework identified the proposed development of national HIA in EIA action plan as an intervention strategy. It takes the existing governing structure and the current EIA strategies into consideration. Nigeria operates a federal system of government, and there is an existing EIA strategy, as already shown in this research. The research has also uncovered some challenges. Based on the research outcomes,

the research developed some guidelines that can help improve the quality of EIA and the level of integration of HIA in EIA. So, this research evidence has helped identify the concerns and propose the intervention strategy.

7.6.1.2 Feasibility, Core-Element, and Implementation of Proposed Framework.

In line with the template from the UK Medical Research Council (Skivington *et al.*, 2021), the design of the Framework followed the stages of developing core elements, feasibility, and implementation. The outcome of the earlier concluded part of this Thesis guided the researcher in identifying the core elements of this Framework. Skivington *et al.* (2021) recommended that the design consider the context, stakeholders' opinions, uncertainties, and economic factors. Information from respondents (who were stakeholders) formed the background for developing its core elements and gave credence to its feasibility and acceptability.

The recommended step-by-step processes for the proposed national HIA in EIA action plan are as follows:

STEP 1: Harmonisation of all administrative and regulatory roles to give synergy and avoid overlaps or duplications. Relevant personnel from the Ministry of Health or the public health sector should join with some selected environmental and petroleum ministries personnel to form an all-inclusive administrative and regulatory body. Within the all-inclusive administrative structure, members should address the following issues concerning the HIA component:

- a) Identifying the health or public health contact persons for impact assessment-related matters.
- b) Identifying the planning nominated contact persons for impact assessment-related matters. (Someone who relates to town planning and overall planning to enhance the consideration of inputs from Impact assessment reports during planning
- c) Establishing how the health sector is informed when impact assessments are initiated and deciding when or if it should be a statutory requirement.

- d) Identifying whether public health resources inputted into EIA have been recognised during budgeting and job description.
- e) Deciding how/when the town planning team should collaborate with public health teams to influence health integration and implementation.
- f) Deciding on the mechanism and responsible person for public health inputs in impact assessment development (such as persons to provide inputs during screening, scoping, etc.)

STEP 2: The all-inclusive administrative and regulatory body should develop terms of reference for a multidisciplinary engagement committee or task force. The TOR should include the development of an HIA guide and its integration into a national integrated impact assessment guide.

STEP 3: Formation of a multidisciplinary engagement committee or task force to liaise with relevant stakeholders to develop a national integrated impact assessment guideline. The task force will report to the harmonised administrative and regulatory body through a priori identified contact persons.

The multidisciplinary engagement committee should draw its membership from representatives from government and public sector organisations, some of which should include industry operators such as oil companies and major project proponents. Other representatives should come from international organisations, donor agencies, academia and research-based organisations, public representatives, administrative staff, and public sector representatives. Independent impact assessment practitioners and consulting firms should also form a core part of the committee, and conscious effort should be made to attract HIA practitioners with wide-ranging local and international experience.

STEP 4: Developing its operational scope by the multidisciplinary engagement committee. Developing its scope requires the identification of proposed tasks and mapping out the approaches needed to execute the tasks. It involves setting up a realistic duration and identifying the resources needed. The committee may need to organise workshops, drawing participants from many sectors. They would also systematically research and analyse health and impact assessment data while

identifying knowledge gaps. The committee should also address the following issues while developing the scope:

- (i) The mechanisms for proportionate assessment of anticipated impacts and addressing of each impact assessment component at each impact assessment operational stage (such as during screening, scoping, assessment, public consultation, post-EIA mitigation and monitoring, etc).
- (ii) The mechanism for identifying and engaging responsible health contact persons for each impact assessment component (HIA, SIA, and EIA) and at each stage (screening, scoping, etc.).
- (iii) The mechanisms for addressing each impact assessment component in the overall IIA report.
- (iv) The mechanism for developing Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) recommendations that would potentially reduce, prevent or mitigate/enhance impacts.
- (v) The level of expectations, coverage, and awareness to be raised on human and population health components to ensure that project proponents and practitioners understand and ensure effective and proportionate assessment from the start. The scope for covering health concerns incorporates understanding the local population's physical and mental health needs and what is needed to meet health priorities. The scope for covering health concerns should consider health equity and the need to identify and protect vulnerable population groups. The scope also includes the broader engagement with health and social care partners.
- (vi) The mechanisms for highlighting relevant local health priorities and opportunities to the developer/project proponent and town planners to ensure effective interrelationship. This would ensure the incorporation of impact assessment recommendations into the activities of relevant town planning organisations. Arts (2011:415) stated that "good coordination between planning levels and between Strategic Environmental Assessment (SEA) and EIA is needed to achieve planning for sustainable development and efficient and effective decision-making."
- (vii) Local health issues that could indicate "significant health effects" and identify how they are communicated to developers.

- (viii) Relevant HIA and EIA training that are needed, and the training opportunities available for interested trainees.
- (ix) Mechanism to holistically resolve identified challenges to community participation in the existing guide.
- (x) The Mechanisms to identify SMART measures to facilitate impact monitoring and evaluation.
- (xi) Mechanism to incorporate mitigation implementation guide into the overall guidance protocol to increase awareness of the implementation of the EMP. Development of unique guidance protocol on good practice relating to mitigation measures and their enforcement.
- (xii) Lifecycle or when the developed National integrated Impact Assessment guideline should be reviewed.

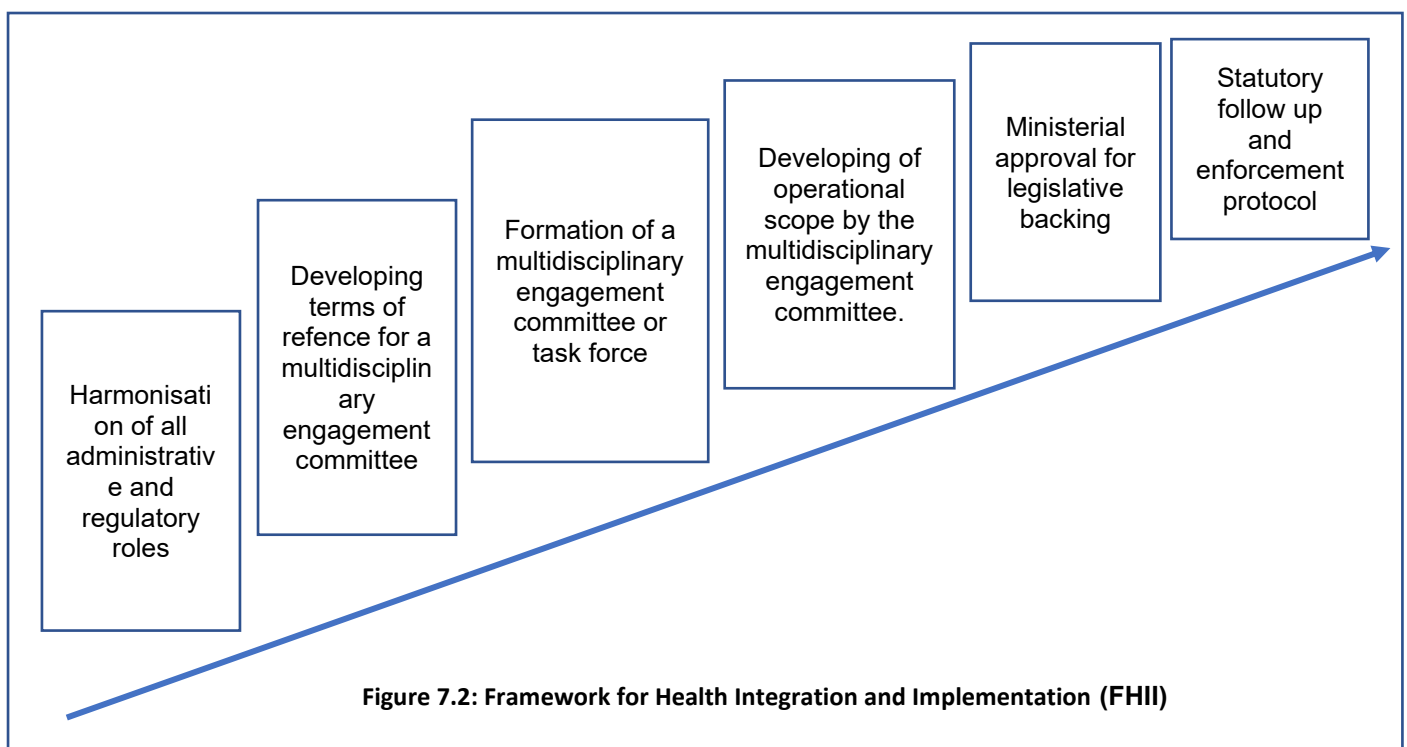
STEP 5: Giving legislative backing and ministerial approval to the developed guidelines.

STEP 6: Establishing a statutory follow-up and enforcement protocol to liaise with project proponents, community and public participants, researchers, impact assessment consultants/consulting firms, and other interested stakeholders.

The researcher got inputs from theory, literature, and respondents to decide on the steps or actions needed in the action plan. The research uncovered concerns about the duplication of roles and inefficiency, which result in economic loss and socio-economic rifts. The research also showed the economic benefit of effective Implementation of EIAs and HIAs. If followed to guide the effective implementation of the proposed national policy, this Framework would help eradicate or minimise the impact of those concerns, strengthen the overall level of integration of HIA in EIA, and improve the implementation of recommended mitigation strategies in completed EIAs.

The full implementation of this Framework is tied to the proposal to develop a "National HIA in EIA action plan". That requires political will and federal approval and is beyond the scope of this research work. However, the Framework's feasibility, flexibility, and validity were tested based on experts' inputs, critiques, and recommendations. The overall research outcome recommended a proposed "National HIA in EIA action plan" based on analysed data. This Framework is a master plan of actions that should guide

the proposed development of a national HIA in EIA action plan. Its implementation was tested based on experts' inputs, comments, and critiques obtained via a Delphi panel of experts. The authors of this research work constituted a Delphi panel comprising two EIA professionals, two colleagues and two other HIA experts to finetune and adopt the final version of the developed Framework. EIA and HIA experts used as respondents in study four conducted a quality evaluation of the final version. Their inputs came through open-ended comments and a Likert scale rating approach. Seven responses were obtained from eleven experts approached. The Framework was rated good in all aspects of feasibility, useability, acceptability, and clarity. The evaluators concluded that the Framework is feasible, easy to understand, and implementable if there is the required political will among the political class. Experts also stated that following the Framework would be economically beneficial because it would streamline and unify the sector. They emphasised that the status quo entails different regulatory units that duplicate functions and waste resources. The outcome of the expert's opinion helped in finetuning the Framework to arrive at the finished template presented in Figure 7.2.



7.6.2 Strengths and Accelerators of the Framework

As stated earlier, A significant strength of the Framework is its simplicity and straightforwardness. The Framework is accessible and designed to be easily understood. Secondly, the Framework recommends harmonising resources, which could be an easy catch for policymakers who want to reduce expenses. Although it may require resources to implement and effect the recommended changes, it is expected to help reduce costs and streamline the sector in the long run. Thirdly, as presented, the Framework anchors the need to improve the practice of EIA and HIA; if well presented to stakeholders, it would be a good motivator for its adoption and implementation.

The researcher hopes to collaborate further with policymakers and stakeholders to ensure the Framework's adoption and implementation. Therefore, a major accelerator is the ability to leverage contacts within the industry to ensure the proposed national action plan's adoption and implementation.

7.6.3 Limitations of the Framework

A major Limitation of this Framework's design is that it cannot be thoroughly tested nationally within the timeframe of this research work. This is because it is beyond the researcher's scope to influence its national application at this stage.

Secondly, the full implementation of the proposed National action plan is elaborate and may require a lot of resources and system restructuring. This may initially make it hard for policymakers to buy into the idea, although it has the potential to become cost-beneficial if fully implemented.

Finally, change is often hard to manage. The proposed national action plan would require many changes in the sector, and such changes may be frightening to stakeholders, regulators, civil servants, and private sector operators involved. It would require much training and, as such, may make the proposed action plan look complex and unattractive. Since the implementation of the Framework is linked to the adoption of the proposed national action plan, the complexity of executing a new national action plan may influence the acceptability of the Framework, which is designed to guide the execution of the action plan.

7.6.4 Relevance and benefits of the Framework

As emphasised in earlier chapters, the proposed framework holds significant benefits for all stakeholders in the impact assessment sector. For community dwellers, the Framework will stimulate a robust transformation of the sector, leading to enhanced regulatory oversights. It will address issues that hindered community participation, such as non-payment of compensation, thereby fostering a more inclusive process. Moreover, it will effectively mitigate the broader impact of environmental degradation on various aspects of community life.

A full implementation of the Framework would lead to increased implementation of recommendations. This will eventually benefit all players, including the government, community dwellers, and project proponents.

To the project proponents, full implementation of the Framework will reduce the overall cost of impact assessment. The government would focus more on funding the process, and project proponents would not have to entirely fund it. In addition, conducting an assessment will become less cumbersome and less time-consuming as practitioners and project proponents will deal with a clearly identified regulatory body with a single regulatory guide. The challenge of dealing with different bodies and duplicating responsibilities would be eradicated.

The implementation of the proposed framework will lead to the development of more sector-specific guidelines, streamlining responsibility and providing a guide to health integration. This will result in improved health outcomes and increased environmental protection. With the growing demand for climate action, such improvements will further bolster the fight against climate change.

The government and other regulatory bodies would have the relevant tools and knowledge to carry out their functions effectively.

The developed framework is user-friendly and designed through a rigorous academic process. It followed a diligent conceptualisation process and allows the subjective view of the user. A conceptualised framework has the benefit of being easy to use and open

to modification during usage. Its emphasis is on understanding the process and relies less on predictions.

CHAPTER EIGHT

Summary of Recommendations and Conclusions

8.1 Introduction

This Chapter gives a recap of the overall research and presents the conclusion to the findings therein. It identifies the alignment of the research outcomes with the issues raised in the research questions and highlights how the objectives set out to achieve the research aims were met. The topics discussed within the Chapter are presented in four subheads. These include the research recap, the summary of recommendations, the summary of research significance and the conclusion. A final subhead highlighting the research's overall limitations is added after the conclusion.

8.2 Overview of the Research Study

The overarching aim of the research is to evaluate the use and implementation of integrated impact assessment and improve the process in the Nigerian Niger Delta region with a special reference to health impact assessment. The research adopted the objective of developing and validating an evaluation tool/checklist for assessing the content and quality of integrated impact assessment, especially concerning health content. A second objective of identifying relevant and recent integrated impact assessments in the Nigerian Niger Delta region was also adopted. The research also appraised the identified integrated impact assessments (for content and quality) using the developed tool specifically designed to assess the quality and health content of completed integrated impact assessments. The final objective of recommending improvements to the IIA processes by developing guidelines for improving health integration in environmental impact assessment while enhancing the implementation of recommended mitigations was also adopted.

The research identified gaps in tool availability and developed an HIA screening tool for use within the region to satisfy the aim and objectives. Consequently, the research developed a new non-sector-specific tool, considerably improving previously available

tools. The tool allows assessors to consider conflict and project abandonment issues while assessing the need for impact assessment.

The research further analysed HIA guides and developed a tool that presents the required standards and basic requirements for HIA coverage in integrated impact assessment. It identified core HIA values, and the Researcher argued that these values should be taken into consideration when integrating health into impact assessment documents. It emphasised the value of equity and the need to enhance the consideration of impact distribution patterns to ensure equity during mitigation.

The establishment of core HIA requirements brought about the need to evaluate previously completed EIAs/ESHIA in the region to assess compliance. The evaluation process assisted in establishing patterns and levels of health coverage and revealed key challenges. Impact assessment in the region was seen to be based entirely on the EIA protocol, and the available legal and administrative frameworks were entirely rooted in EIA practice. The total reliance on EIA legal frameworks further prompted the need for further investigation into the mode of impact assessment practice in the region of interest to assess the level of health integration.

Consequently, the Researcher conducted a holistic and more comprehensive investigation into ESHIA practice in the Niger Delta region via the qualitative interview approach. The components mainly assessed were the mode of practice, level of community participation, nature of health coverage, and implementation of recommended mitigations.

The research aim was to evaluate the use and implementation of integrated impact assessment and improve the process in the Nigerian Niger Delta region with particular reference to health impact assessment.

The comprehensive investigation into the practice of ESHIA or integrated impact assessment in the region aided the evaluation of the mode of practice. It brought to the fore critical challenges associated with the practice of ESHIA in the region. The mode of practice in the region involves integrating all key components of impact assessment (environmental, social and health) in one finally approved report. The processes leading up to the production of the report involve the concerted effort of

independent but interrelated groups of experts in the task of data gathering, analysis, report writing, and review.

Given a successful diagnosis of the challenges affecting the practice of integrated impact assessment in the region, numerous approaches to overcome the challenges were identified and recommended. One of such outcomes was the development of a Framework for improving health integration in integrated impact assessment. The Researcher recommended the application of the Framework and made several other suggestions for improving the implementation of mitigations contained in the EMPs. Applying or implementing the recommended approaches and the proposed Framework would improve the Integrated impact assessment process within the region.

In addressing the research objectives, the research satisfied the first objective (Objective 1) by developing a screening tool for health impact assessment. It further developed an evaluation tool for standard HIA requirements, which can assess the level of integration of health in the Integrated Impact Assessment document.

The detailed evaluation of systematically selected EIAs from the Niger Delta region helped to address the second objective (Objective 2) satisfactorily. The evaluation process identified the mode of practice of EIA in the region and gave insight into the legislative framework and the level of health coverage in EIAs. The third objective (Objective 3) was also successfully addressed while evaluating identified impact assessments in Study 3.

Finally, the fourth and final study satisfactorily addresses the fourth objective (Objective 4). The comprehensive investigation into the practice of ESHIA or integrated impact assessment in the region aided the development of the proposed framework/guidelines for improving health integration in environmental impact assessment. The proposed Framework also contained recommendations for improving the level of implementation of recommended mitigations.

8.3 Strengths, Limitations and Biases of this Study

Before discussing the limitations of this research work, it is essential to highlight the strengths of the research. The research used a multimethod qualitative approach,

ensuring the best method for each study stage. This approach helped in harnessing the strengths of each method. Additionally, the data from a previous study (Study 3) was triangulated with Study 4 data to ensure consistency and generalisability and to develop a more comprehensive understanding of the phenomena. Further triangulation occurred while obtaining interview data from different sets of interviewees. The research also recruited very experienced contact persons with adequate experience in qualitative research to form part of the data generation team. Although the research imbibes the idea of subjectivity, the Researcher's choice of descriptive phenomenology ensures reduced impacts from influences of his identity while still producing an in-depth study of the phenomena. Maintaining a robust audit trail throughout the research process enhances the research's reliability, trustworthiness, and generalisability. Section 4.7 presents the details of processes adopted to ensure trustworthiness. The research also complied with the university's ethical guide. Compliance with the university's ethical guidance also enhances the research's validity.

Theofanidis and Fountouki (2018:155) opined that the underlying approach, study design, data generation, and method of analysis of any research inevitably carries limitations and delimitations. They encouraged authors to "openly and extensively report their research limitations, delimitations and assumptions" as that will improve the quality of research outcomes. Many other authors have emphasised the need to communicate all uncertainties and limitations openly and transparently in qualitative research (Puhan *et al.*, 2012; Simon and Goes, 2013; Helmich *et al.*, 2015). Like any other research study, this research design has some underlying limitations.

Firstly, the quality of documents included in Studies 1, 2, and 3 was out of the author's control. Methodological flaws in the original documents may have existed, which may inherently influence the review process. Secondly, the inclusion and exclusion criteria for Study 2 were relaxed to include all published documents because most available guidelines were not from peer-reviewed articles. The inclusion criteria were relaxed to enhance the process's objectivity and to capture all available guidelines. The selection of included documents relies on the inclusion and exclusion criteria designed based on the author's subjective judgement. It depended entirely on the author's judgement. Documents may have been excluded, which would have added more diversity to the

work. Only documents written in English were used, which invariable limited the coverage. Additionally, the databases, the indices for analysis, and the interpretation of documents were all done within the purview of the author's judgement, which could have been prone to misses or misinterpretations.

For the fourth and final study, the global coronavirus outbreak coincided with the time of data collection. The COVID-19 outbreak changed the data collection protocol, which was previously designed to be conducted through face-to-face interviews. The Researcher acknowledges the limitations of not directly meeting with interviewees. Some tips from nonverbal communication, such as facial expressions and body language, could be missing.

The Researcher also acknowledges that interpretations and analyses of data may have been influenced by the Researcher's inherent biases or subjectivity. The acknowledgement of such biases encouraged more effort to improve objectivity from the Researcher's standpoint. Such attempts included incorporating lessons learnt from the pilot interviews.

The Main delimitations of Study 4 include the fact that a qualitative data collection technique was utilised, which involved administering semi-structured telephone interviews and field notes from informal telephone conversations with contact persons and participants. In addition, the study sample consisted of 19 participants drawn from members of the Otuoke community, members of the Federal University of Otuoke University community, and HIA/EIA practitioners in the region.

8.4 Summary of Research Significance

This study evaluated the current state of health integration in IIA practice and identified challenges affecting the implementation of mitigations. It also developed tools to improve practice and designed a framework for intervention. The research can potentially have far-ranging implications for policy decision-making and contribute to knowledge-building within the environment and health sector. The recommendations emanating from the research can have implications for the Niger Delta region and can positively impact the Nigerian polity. Subsequent subheads discuss the research implications and future research and development prospects.

8.5.1 Summary of Policy Implications of the Study

This research work and its findings will have some regional policy implications. It will contribute to the overall knowledge base and add to available theory in impact assessment.

Implementing the Framework for Health Integration and Implementation (FHII) framework would lead to restructuring the existing administrative structure. Administrative policies and organograms within the administrative, regulatory, and enforcement arm would need to be adjusted. Responsible individuals would have to make provisions for such change and adjustment.

Another implication of the study is that industry players, academics and training institutions will need to update their knowledge and curriculum to include newly developed tools and identified challenges. Professionals, researchers, and stakeholders will also need to update their professional knowledge to include some understanding of the FHII framework. This will enable them to understand, implement, and train future practitioners.

Other developing economies may learn from the challenges identified in this research work and understand the need to strengthen their regulatory functions, as failure could lead to devastating socio-economic consequences, as witnessed in the Niger Delta region.

The developed Framework will enable industry operators and project proponents to focus on and deal with one regulatory entity with a robust and comprehensive legal framework. This will enhance efficient communication via consistent and reliable channels.

A potential policy implication of implementing the proposed Framework is that it will lead to the establishment of a new legal Framework or legislative acts that would give legal authority to the outcome and ensure its enforcement.

8.5.2 Summary of Study's Contribution to Knowledge and Implications to Niger Delta and the Nigerian Polity

This research work started as a theory-building exercise. Using existing theory and evidence, it has produced two critical tools and has added to the available resources for HIA and IIA practice. It is envisaged that the application and use of these tools would improve practitioners' capacity and overall impact assessment practice in the region.

The research has revealed some malpractices and sharp practices that some stakeholders and practitioners undertake. The outcome of investigating community engagement in the published FUA EIA report was quite revealing. It could serve as a reference point for regulators to ensure more scrutiny in their enforcement activities.

The research also provides insights into the challenges facing practice in general. Some of these challenges are applicable in other regions of the world, especially in most developing countries. The research outcome could, therefore, provide enormous resources for future guidelines development.

By facilitating improvements in impact assessment processes and improving the community engagement component, the research helps mitigate incessant conflicts associated with the region due to environmental degradation.

The research highlighted the need for local healthcare coordination and improvement. This is expected to raise awareness of the region's increasing healthcare needs and encourage relevant authorities to provide the necessary care.

Implementing the proposed Framework could revamp impact assessment practice, restore community trust in existing regulatory authorities, and boost practitioners' confidence. This would result in improved sustainable growth and the creation of a sustainable environment in line with the current global SDGs.

8.5.3 Prospects for Further Research and Development

Starting with Study 1, the Researcher highlighted that the developed tool is generic and not sector specific. A possible prospect for further contextualisation of available tools would be to adapt the tool to meet the demands of specific sectors such as oil and gas, construction, etc.

The research and its findings were based on the interpretation of data obtained from the cross-sectional study of impact assessment practitioners and community members. A detailed longitudinal study incorporating the regulators could further assess the acceptability and expediency of the FHII framework and subsequent recommendations. Implementing the FHII framework and its recommendations could raise the need for further academic evaluation of its efficacy. A more extensive study with a large sample size could be commissioned to collaborate on these research findings, especially around community participation. This might be needed to enhance the generalisability of the research outcome.

8.5 Recommendations

The research findings identified many challenges to health integration in the Niger Delta region that affected the overall practice of integrated impact assessment. Consequently, many interventions and recommendations were proposed to mitigate the challenges. The proposed Framework for improving health in integrated impact assessment or ESHIAs is a significant output of the research. The workability of this Framework depends mainly on its implementation and its strategy. Below are some recommendations to enhance the implementation of the proposed Framework and the overall impact assessment practice.

- 1) The government should summon the needed political will to holistically overhaul the country's impact assessment protocol. A starting point should be to commission the first step of the proposed Framework for Health Integration and Implementation (FHII), thereby eradicating duplicity, complex and iterative bureaucratic processes, and overlaps. The proposed Framework is diagrammatically represented in Figure 7.2 and described in Section 7.6.

- 2) The current government mantra on "the fight against corruption" should extend beyond targeting elected political officeholders to bureaucrats and public civil servants. Subsequently, it should focus on eradicating corruption within the ranks and file of the impact assessment process. Regulators should be adequately motivated to shun corruption and corrupt practices to enforce compliance adequately.
- 3) The government should consider adopting a proportionate funding structure for its impact assessment administration and regulatory roles. An independent funding source that will ensure that regulatory and enforcement duties are carried out efficiently without depending on income generated from project proponents should be created.
- 4) The government should consider enacting or amending extant laws to empower and link planning commissions to the impact assessment process. Such laws should ensure that proposed projects (including government projects) are backed by adequate funding arrangements to avoid incessant cases of project abandonment.
- 5) The government should consider improving local health infrastructure to enable the creation and maintenance of a current and up-to-date local health database. This will reduce the challenge associated with insufficient or lack of adequate health data needed for background data.
- 6) The government should take practical steps to address the security challenges bedeviling the region. This would ensure that project proponents, regulators, and other practitioners can safely engage with community participants and conduct detailed impact assessments during community engagement exercises.
- 7) In addition to implementing the proposed Framework, the government should embark on an aggressive education and awareness drive to properly educate the public on the merits of community engagement and the role of impact assessment in our collective sustainability. Resources for professional training should be made available to impact assessment professionals.
- 8) Industry players, companies, and significant stakeholders should ensure that in-house capacity for impact assessment within their organisations is developed and continuously improved. A good example is maintaining an effective and well-staffed Health, Safety and Environment (HSE) unit.

8.6 Conclusions

This research study attempted to investigate and ascertain the level of health coverage in Integrated impact assessment reports as it is practised in the Niger Delta region. It also attempted to investigate and ascertain the level of implementation of recommended mitigations from previously completed impact assessment reports. The evaluation of relevant literature in studies one, two and three has led to the establishment of core values of HIA and the development of HIA standard requirements. This provided a background of feeder information for a more comprehensive investigation in Study 4. Sixteen participants were purposively chosen and engaged in a semi-structured interview, and the narration of their lived experiences suggests that the level of health coverage in integrated impact assessment in the region still needs to be improved. The results also suggest an increased interest in EIA and related activities by the community members. The incessant and increased environmental degradation has led to this recent rise in interest. It was suggested that the devastating effect of environmental degradation has led to increased interest in environmental issues. Despite the recent renewed interest in environmental issues, the results show a low level of engagement in the overall quality of the impact assessment and the level of community participation. Similarly, the results also show inadequate implementation of mitigation, enforcement and follow-up levels.

Several challenges to the various impact assessment processes were identified. Prominent among those challenges were the lack of strong administrative, regulatory, and enforcement strategies and the prevalence of corruption and malpractices. The poor financing structure and lack of a proper and definite HIA engagement plan were also identified as significant challenges.

Several recommendations were proposed to overcome these challenges, and a national framework for integrating health in EIA has been proposed for implementation. The proposed Framework also includes adequate strategies to improve the implementation of recommended mitigations. It is this Researcher's hope that the implementation of the proposed framework will achieve adequate and quality coverage of health concerns in impact assessment.

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Appendix A: Different Definitions of HIA

Table showing different definitions of Health Impact Assessment

Health Impact Assessment is 'a combination of methods to examine formally the potential health effects of a proposed policy, program or project' (Cole et al., 2005).

Health Impact Assessment is 'a methodology which enables the identification, prediction and evaluation of the likely changes in health risk, both positive and negative (single or collective) of a policy, program plan or development action on a defined population. These changes may be direct and immediate or indirect and delayed' (BMA Board of Science and Education, 1998).

Health Impact Assessment is 'the estimation of the effects of a specified action on the health of a defined population' (Scott-Samuel, 1998).

Health Impact Assessment is 'a tool to analyse a programs impact on wide range of factors that affect Human Health' (Winters, 2001).

Health Impact Assessment can best be described as a decision-making tool. One that is designed to take account of the wide range of potential effects that a given proposal may have on the health of its target population (UK NHS 2001).

Health Impact Assessment is a means 'of evidence-based policy making for improvement in health. It is a combination of methods whose aim it's to assess the health consequences to a population of a policy, project or program that does not necessarily have health as its primary objective' (Lock, 2000).

Health Impact Assessment is 'a method for describing and estimating the effects that a proposed project or policy may have on the health of a population' (British Columbia Ministry of Health 1995).

Health Impact Assessment is defined as 'any combination of procedures or methods by which a proposed policy or program may be judged as to the effects it may have on the health of a population' (Frankish et al., 1996).

Health Impact Assessment is a developing approach that can help to identify and consider the potential or actual health impacts of a proposal on a population. Its primary output is a set of evidence-based recommendations geared to informing the decision-making process (Quigley & Taylor, 2004).

Health Impact Assessment is a developing process that uses a range of methods and approaches to help identify and consider the potential – or actual – health and equity impacts of a proposal on a given population (Taylor and Blair-Stevens, 2002)

APPENDIX B

Appendix B: Demographic Data of Respondents

Contact Persons

| Name / Code | Sex | Educational Level Role in HIA Practice | Years of Practice | Name of Organisation | Professional Sector | Type of Organisation | Professional Background |
|------------------|------|---|-------------------|--|-------------------------|----------------------|-----------------------------------|
| Contact Person A | Male | PhD | Over 8 years | Federal University of Otuoke | Educational Institution | Governmental | Sociology |
| Contact Person B | Male | PhD (Associate Prof) | 18 years | Cross River State University of Technology | Educational Institution | Governmental | HIA Practitioner (Health Impacts) |

Impact Assessment Professionals

| Name / Code | Sex | Educational Level | Role in HIA Practice | Years of Practice | Name of Organisation | Professional Sector | Type of Organisation |
|-------------|------|-------------------------------------|--|-------------------|----------------------------|------------------------------|----------------------|
| F06 | Male | PhD | environmental physiology/ Hydrogeology | Over 12 years | University of Calabar | Educational Institution | Governmental |
| G07 | Male | Doctor of Veterinary Medicine (DVM) | Social Impacts (Environmental/social safeguards) | Over 26 years | African Development Bank | Developmental sect (Finance) | Private sector |
| H08 | Male | PhD. Associate prof | HIA practitioner (Social impacts) | Over 21 years | Akwa Ibom State University | Educational Institution | Governmental |
| I09 | Male | PhD (Professor) | EIA (Biophysical Impacts) | Over 27 years | University of Uyo | Educational Institution | Government |
| J10 | Male | MSc | | Over 13 years | | | |

| K11 | Male | BSc | EIA (Biophysical Impacts) | Over 12 years | Environmental Resources Managers Limited | Environmental management | Private Sector |
|------------------------------|------------|--------------------------|--------------------------------------|------------------------------|--|--------------------------|----------------|
| L12 | Male | PhD (Professor) | SIA (Socio-economic Impacts) | Over 22 Years | Federal University of Otuoke | Educational Institution | Government |
| M13 | Male | PhD | Environmental Impacts and management | Over 25 Years | Niger Delta University. | Educational Institution | Government |
| N14 | Male | PhD: Associate prof | Environmental Impacts | Over 20 Years | Akwa Ibom state University | University Lecturer | Government |
| M15 | Male | PhD | Environmental Biology | Over 15 Years | Environment Resources Managers LTD | Environmental Management | Private sector |
| 016 | Male | PhD | Environmental impacts | Over 22 years | Niger Delta University. | Educational Institution | Government |
| Community Respondents | | | | | | | |
| Name / Code | Sex | Educational Level | Age | Name of Organisation | | | |
| A01 | Male | PhD | 45 | Federal University of Otuoke | | | |
| B02 | Male | MSc | 55 | Civil servant | | | |
| CO3 | Male | BSc | 57 | Federal University of Otuoke | | | |
| D04 | Male | BSc | 58 | Civil servant | | | |
| E05 | Female | OND | 35 | Civil servant | | | |

Appendix C

Appendix C: Interview Protocol

Introduction and steps to take during interviews

Things to do when setting up the interview.

- Set up a convenient desk in a conducive environment and be ready at least 10 minutes before the time.
- Test all gadgets to be used for the interview process before the start of the interview:
- Go through the interview questions again to ensure fluency
- Review research aim and ensure that reference is made towards achieving research aim

Things to do when beginning the interview.

- Salutation: Good morning/ afternoon or evening and general salutation
- Self-introduction: Name, course of study, school, and research area.
- Research Introduction and reference to previously submitted participants information pact.
- CONSENT: A verbal confirmation of consent and a reminder to the consent form previously completed. A reminder of freedom to withdraw at any stage of the research and freedom to seek more clarity
- Recording: Information of the recording and note taking process and request for a verbal consent for the process to be audio-recorded.
- Interview Process: A reminder of how the interview process will go, e.g., that you will be asking the questions based on a list of already approved questions and he would give independent views and responses. He is also allowed to ask any question or bring any input that he finds necessary even if it is not part of the intended question.

Things to do during the interview process.

A. The interview process 1: The interview questions

A: Questions for Impact Assessment Practitioners

- I. Can you tell me how HIA, EIA and IIA is practice in Nigeria in your view?
Probe: Differences, Preferences, awareness of each, regulations behind each, prospects, and hindrances (e.g., resource availability).
- II. From your experience, can you narrate your experience of integrating health impact assessment and environmental impact assessment? Examples
Probe: limitations, successes/prospects, frequency of practice, awareness level
- III. When integrating all impact in one impact document, from your experience, could you explain if there could be any possible conflicts in the coverage of each aspect of Impacts of developments (e.g., environmental, health, social and economic)? If there are, what are the possible areas of conflicts.
- IV. From your experience, can you tell me the level to which health-related impacts are covered in the assessment processes that you have been involved with. **Probe:** Adequately, inadequately when compared with other impacts such as environmental, social, and economic impacts.
- V. From your experience, could you explain how community involvement is caried out during impact assessment? **Probe:** Assess level/degree of involvement. **Probe further:** hinderances/obstacles, usefulness (does it improve the process), disadvantages, areas of improvement, prospects.
- VI. From your experience, can you explain how government have been implementing or responding to the recommendations emanating from previously completed impact assessments? **Probe:** level of response, effects of level of response (to community health), challenges or causes of level of response (WHY).
- VII. Can you also tell me your understanding of the level of implementation of these recommendations by the companies involved in these projects?
Probe: effect of Regulators, level, effect, and challenges.
- VIII. From your experience, are there aspects of the recommendations that are more implemented that others? e.g., health issues versus non health issues.
- IX. What's your understanding of the practice of health impact assessment?
- X. From your views, how can the entire process of IIA be improved in Nigeria

B: Questions for Community Participants

- I. Can you tell me what your experience of participating in impact assessment was like? How will you evaluate the process?
- II. Do you think this project have impacted on the health of the people within the community? If so, how? Examples
- III. Can you tell me if health impacts were addressed impact assessment? If so, were health issues adequately and holistically covered as compared to environmental, social and economic issues? Examples of health issues covered
- IV. From your experience, can you explain the level of community involvement or how the community was involved in the impact assessment processes that you were involved in. (**Probe:** was it enough? Too low or too high?) (**Probe:** helpful or not helpful or no effect and how?).
- V. From your opinion, can you tell me how your views, inputs and opinion and the opinion of other community dwellers were utilised in the final report? (**Probe:** Do you think your opinion were accepted and utilised, rejected or not just useful)
- VI. From your experience, can you tell me areas that you will recommend for improvement, or do you have suggestions for the improvement of the process in future impact assessment?
- VII. From your experience, can you tell me how the government or the contracting companies have implemented the recommendations from the impact assessment report? (**Probe:** how do you assess the implementation: fully implemented, partially etc.) **Probe:** examples of areas of implementation)
- VIII. Can you briefly tell me how you think this project have impacted on the community? Were all these impacts (if any) proposed and addressed in the impact assessment report?

B. The interview process 2: Things to do while conducting the interview

- Note taking: Taking relevant notes to clarify issues which may not be very clear when listening to the tape version only. Taking note of exclamations and gestures (if interviewed via video link).
- Audiotaping

Things to do while concluding the interview process?

- Thanking the participant for participating,
- Asking if there is any questions or areas that the respondent may seek clarity.
- Informing that there would be a member checking or respondent validation process and seeking consent if he/she would want to participate.

What to do after the interview process?

- Fill in notes, and recheck that note are clear and could be interpreted and understood,
- Check audiotape for clarity, and confirm that the tapes are clear and audible enough
- Plan to transcribe as soon as possible and fix transcribing dateline.
- Summarize key information and note all relevant information gathered during the interview process.

Appendix D: Consent Form

CONSENT FORM

Title of Project: **INTEGRATED IMPACT ASSESSMENT (IIA) AND HEALTH IN THE NIGERIAN NIGER DELTA COMMUNITIES: EFFECTS OF FULL OR NON-IMPLEMENTATION OF RECOMMENDATIONS ON HEALTH OUTCOMES.**

Name of Researcher: **Ibiangake Ndioho**

Please initial all boxes

1. I confirm that I have read and understand the information sheet dated **20/10/2020** (version **001 or 002**) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without any consequences.
3. I agree to take part in the above study.
4. I agree that research data gathered for the study may be published provided that I cannot be identified as a subject.
5. I agree to the use of audio equipment which may give room to possible use of verbatim quotation during the interview

Name of Participant

Date

Signature

Name of Person

Date

Signature

APPENDIX E

Appendix E: Participant Information Sheet for Interviews

INTEGRATED IMPACT ASSESSMENT (IIA) AND HEALTH IN THE NIGERIAN NIGER DELTA COMMUNITIES: EFFECTS OF FULL OR NON-IMPLEMENTATION OF RECOMMENDATIONS ON HEALTH OUTCOMES.

1. Invitation to research

I would like to invite you to take part in this research titled “Integrated Impact Assessment (IIA) and Health in the Niger Delta communities: Effects of full or non-implementation of recommendations on Health outcomes. My name is Ibiangake Friday Ndioho and I am a PhD research student from Manchester Metropolitan University, United Kingdom. My research project is about Integrated Impact Assessments and Environmental Impacts Assessment, and I am investigating the procedures of carrying out Integrated Impact Assessment and Environmental Impact Assessment in your region and your understanding and involvement in the process. The research is part of my work as a research student with the Manchester Metropolitan University. It is currently self-funded.

2. Why have I been invited?

You have been selected as a potential participant in this research because the researcher qualifies you as a stakeholder in impact assessment within the Niger delta region. The researcher classifies stakeholders (in this context) to include major community leaders; Impact Assessment assessors; government personnel and regulators; and community dwellers whose residence are located within 1km radius of a selected project. Final stage of selection for inclusion included a random selection from the collated list of stakeholders of which you were one of those selected.

3. Do I have to take part?

Your participation is entirely voluntary. It is up to you to decide. We will describe the study and go through the information sheet, which we will give to you. We will then ask you to sign a consent form to show you agreed to take part. You are free to

withdraw at any time, without giving a reason. You may refuse to respond to any question that you are uncomfortable with. The management of the information given will ensure that strict **confidentiality** is adhered to, and all the stages of data generation and management will ensure strict compliance to ethical standards. **Anonymity** of participants will be guaranteed to ensure that participants are not identified. You can withdraw your participation at any time by indicating your desire to withdraw and there will be no negative consequences whatsoever.

4. What will I be asked to do?

Your participation in this part of the Research will involve your responding to various interview questions bordering on your experiences and general knowledge of the practice of Integrated Impact Assessment. Questions will also touch on the limitations, strengths and the level of practice of Integrated Impact Assessment. The interview session should take approximately thirty (30) minutes of your time. The entire data generation/collation process for this project will last for about three months.

Your consent will be required before any interview will commence and this will be after you have read and understand the information sheet. Your verbal response to interview questions will be required during the interview session and the location for the interview will be a place of convenient and safety for both the interviewee and the interviewer. The location will be as decided by you taking into consideration your safety and comfort as well as that of the interviewer. The interview session will only occur once, and an audio recording device may be use for the purposes of recording the interaction. If an audio recording device is used, you will be informed of its usage and your consent will be sort separately for that purpose. If an audio recording device is used, it will only be used to aid transcription and the audio will be safely destroyed after the entire responses have been transcribed. No recording will be used directly for publication and your anonymity will strictly be maintained.

5. Are there any risks if I participate?

There are NO specifically identified risk attached to your participation in this research. This is in anticipation that Naturally occurring risk, such as risk of short local travel to and from location comes with insignificant trait.

6. Are there any advantages if I participate?

You may stand to gain more understanding of IIA as you participate in the research. The results from this research will also add to more understanding of the practice of Integrated impact Assessment and Environmental Impact Assessment, which may result in an improved response to environmental and health impacts by the governments and other international companies operating within your region.

7. What will happen to the samples that I give?

You will NEVER be required to give any form of sample throughout the session.

8. What will happen with the data I provide?

When you agree to participate in this research, we will collect from you personally identifiable information.

The Manchester Metropolitan University ('the University') is the Data Controller in respect of this research and any personal data that you provide as a research participant.

The University is registered with the Information Commissioner's Office (ICO) and manages personal data in accordance with the General Data Protection Regulation (GDPR) and the University's Data Protection Policy.

We collect personal data as part of this research (such as name, telephone numbers or age). As a public authority acting in the public interest, we rely upon the 'public task' lawful basis. When we collect special category data (such as medical information or ethnicity) we rely upon the research and archiving purposes in the public interest lawful basis.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways for the research to be reliable and accurate.

If you withdraw from the study, we will keep the information about you that we have already obtained.

In the event of your withdrawal from the study, data collected up to that point of withdrawal will be included unless you specifically disapprove such inclusion. You have up to two weeks to express your disapproval and you can do this by emailing me using my address displayed at the end of this information sheet.

We will not share your personal data collected in this form with any third parties.

If we were to share your data, this will be under the terms of a Research Collaboration Agreement which defines use and agrees confidentiality and information security provisions. It is the University's policy to only publish anonymised data unless you have given your explicit written consent to be identified in the research. **The University never sells personal data to third parties.**

We will only retain your personal data for as long as is necessary to achieve the research purpose. Your data will be put into a pool of data that will be collated from other participants and final analysis will ensure that the information given is not traced to any personal data. Full anonymity will be guaranteed. Any personal data gotten will only be kept for as long as the analysis will last and will be destroyed in accordance with the Manchester metropolitan data protection policy. While analysis is still ongoing, all data collected will be securely kept under lock and key (e.g., in a locked cabinet or on a password protected computer) and strictly under the supervision of the main researcher only and will be destroyed when no longer required.

For further information about use of your personal data and your data protection rights please see the [University's Data Protection Pages](#).

What will happen to the results of the research study?

The final result of this research will form part of the reports that will be published as a PhD thesis to the Faculty of Health, Psychology and Social Care, Manchester Metropolitan University. Also, parts or all of the results is also intended to be published in peer reviewed Journals and could as well be presented in Conferences.

Who has reviewed this research project?

This project has been reviewed by the HPSC Faculty Ethics Committee, My supervisors, my internal reviewer, and my academic peers.

Who do I contact if I have concerns about this study or I wish to complain?

If you have any questions during or after the completion of the interviews, you are encouraged to contact me at any time by email or by telephone. My contact details are stated below.

Ibiangake Friday Ndioho.

Faculty of Health, Psychology and Social Care, Manchester Metropolitan University, Birley Fields Campus, Brooks Building, 53 Bonsall Street, Manchester, M15 6GX, United Kingdom.

E-mail: faithfulndioho@yahoo.com; ibiangake.ndioho@stu.mmu.ac.uk

Tel: [+44 \(0\)161 247 2000](tel:+44(0)1612472000)

If you have any further questions and concerns that you might not be comfortable discussing with me directly, you can please contact my supervisor using his contacts below:

Dr Haruna Moda,

Senior lecturer in Occupational Safety, Health and Environment, Faculty of Health, Psychology and Social Care, Manchester Metropolitan University, All Saints Building, 36 Cavendish South, Manchester, M15 6BH, United Kingdom.

E-mail: h.moda@mmu.ac.uk

Tel.: +44 (0) 1612472781

You are also encouraged to contact an independent person for further concerns and complaint should you have the need to register your complaints. Contact details of the independent contact person is as stated below.

Professor Juliet Goldbart,

Faculty Head of Ethics. Faculty of Health, Psychology and Social Care, Manchester Metropolitan University, Birley Fields Campus, Brooks Building, 53 Bonsall Street, Manchester, M15 6GX, United Kingdom.

E-mail: j.goldbart@mmu.ac.uk

Tel.: [+44 \(0\)161 247 2578](tel:+44(0)1612472578)

If you have any concerns regarding the personal data collected from you, our Data Protection Officer can be contacted using the legal@mmu.ac.uk e-mail address, by calling 0161 247 3331 or in writing to: Data Protection Officer, Legal Services, All Saints Building, Manchester Metropolitan University, Manchester, M15 6BH. You also have a right to lodge a complaint in respect of the processing of your personal data with the Information Commissioner's Office as the supervisory authority. Please see: <https://ico.org.uk/global/contact-us/>

THANK YOU FOR CONSIDERING PARTICIPATING IN THIS PROJECT

Appendix F

Appendix F: Contextualised HIA Screening Tool

TOOL GUIDE:

This tool is systematically designed to guide the user in determining if a project will incur enough health impacts to warrant the execution of HIA and the type of HIA that may be needed

Tool usage:

Screening being the first stage of HIA should best be undertaken prospectively at the developmental stage of the project. A screening team carefully selected to have the required skills and expertise should undertake HIA.

This screening tool comprises of four major sections: Project information and team formation, Impacts on determinants of health, Potential impacts in the event of project abandonment or conflict, decision, and rationale for or against the proposed HIA and Type of HIA.

Section 1 collates relevant information on the project while section 2 contains screening questions concerning potential impacts on determinants of health. A 'YES' or 'UNKNOWN' answer to question 2b, 2d and 2e means that a certain type of impact Assessment should be undertaken. However, the type to be undertaken will depend on the response to section 4 and the rationale as assessed by the screening team.

Section 3 covers questions on potential impacts emanating from conflicts or project abandonment. A Delphi approach should be used by members of the screening committee to arrive at conclusions and a conclusive decision on whether to conduct an HIA should be reached. Two or more DK means sufficient information is not available so HIA should be recommended.

Section 4 covers the selection of the appropriate HIA type and method. The table in 4C provides a guide to the characteristic of the various forms of HIA.

A pro forma is also attached to be completed if HIA is not required. This is to ensure the possibility of an audit trail for the whole exercise, which ultimately ensures objectivity.

Section 1:

| 1a: Formation/composition of Screening Team | |
|--|----------------|
| Name and contact details of Facilitator | |
| Name and contact details of Organisation(s) commissioning the HIA | |
| Name and contact details of Organisation(s) executing the proposed project | |
| Names of Members of HIA screening team | |
| Terms of Reference for members of screening team | |

| 1b: Proposal Information Chat. | |
|---|--|
| <i>(For the convenience of producing this checklist, the term 'Project' shall be used in place of projects, programmes, policies, or strategies)</i> | |
| Title of Proposed Project | |
| Screening date(s) | |
| Summary of Aims and Objectives of proposal | |
| Duration of proposed project (proposed period from start to completion) (if Applicable) | |
| Industry sector of the proposed project (Agriculture, Oil and Gas etc.) | |
| Operational independence of proposed project (is the proposed project operationally dependent or interdependent on other projects)? | <input type="checkbox"/> Yes <input type="checkbox"/> No (if No, please give details) |
| Type of proposed project | <input type="checkbox"/> Project <input type="checkbox"/> Programme <input type="checkbox"/> Policy |
| How is the proposal funded? | <input type="checkbox"/> Government <input type="checkbox"/> Organised private sector <input type="checkbox"/> Community <input type="checkbox"/> Individual <input type="checkbox"/> Jointly funded (state participants) |
| Is the proposal constitutional? | <input type="checkbox"/> Yes <input type="checkbox"/> No (if No, please give details) |
| Is the project an existing or new project? | |
| Stage of development of project concerned | <input type="checkbox"/> Planning <input type="checkbox"/> Consultation <input type="checkbox"/> Mobilization <input type="checkbox"/> Construction <input type="checkbox"/> Completion <input type="checkbox"/> Operational <input type="checkbox"/> Decommissioning <input type="checkbox"/> others |
| Brief description of Host community | |
| Estimated Coverage area or area of possible impact | |

Section 2:

Screening Questions/Quasi Assessment questions to help identify any possible health effects that could emanate from the implementation of the proposed project

Effects on Determinants of Health

| 2a: Will the implementation of this proposed project have any POSITIVE effect on any of the under listed determinants of health | | |
|--|--|---|
| Health Determinants | Effect (YES (Y), DON'T KNOW(DK), NO (N), | Description of level and nature of effect |
| Institutional factors, (Public Health System and Healthcare) | | |
| Socio-cultural, religious, and traditional environment | | |
| Biophysical environment | | |
| Socio-economic environment | | |
| People's biological characteristics | | |
| People's lifestyle and behaviours | | |
| Other Broader Health Determinants (See Appendix G2) | | |

| 2b: Will the implementation of this proposed project have any NEGATIVE effect on any of the under listed determinants of health | | |
|--|--|--|
| Institutional factors, (Public Health System and Healthcare) | | |
| Socio-cultural, Religious, and traditional environment | | |
| Biophysical environment | | |
| Socio-economic environment | | |
| People's biological characteristics | | |
| People's lifestyle and behaviours | | |
| Any other Health Determinants (See Appendix G2) | | |

Impact Distribution and Inequality

| 2c: Will the implementation of this proposed project have any POSITIVE effect on any of the under listed population groups? {YES(Y); NO(N); DON'T KNOW(DK)} | | | |
|--|--|--|--|
| Entire population | | People in poverty | |
| New parents | | People with learning disability | |
| Pregnant women | | People with drugs and alcohol problems | |
| New-born (0 -5) | | Gay men, lesbians, bisexual people | |
| Children (5-12) | | People with certain ethnicity | |
| Teenagers 13-18 | | Specific religious group | |
| Young adults (19-25) | | Physically challenged people | |
| Men | | Any specifically defined group of people | |
| Women | | Geographic area | |
| Older people | | Homeless people | |

| 2d: Will the implementation of this proposed project have any NEGATIVE effect on any of the under listed population groups? {YES(Y); NO(N); DON'T KNOW(DK)} | | | |
|--|--|--|--|
| Entire population | | People in poverty | |
| New parents | | People with learning disability | |
| Pregnant women | | People with drugs and alcohol problems | |
| New born (0 -4) | | Gay men, lesbians, bisexual people | |
| Children (5-12) | | People with certain ethnicity | |
| Teenagers 13-18 | | Specific religious group | |
| Young adults (19-25) | | Physically challenged people | |
| Men | | Any specifically defined group of people | |
| Women | | Geographic area | |
| Older people | | Homeless people | |

| | | |
|---|---|--|
| If yes to any of the population groups in question 2d, | | |
| Question 2e: Health Equity {YES(Y); NO(N); DON'T KNOW(DK)} | | |
| Could any of the assumed negative health impacts be avoided | <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> DK | |
| OR could the impacts be better distributed amongst diverse population groups | <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> DK | |

| | |
|---|--|
| PRELIMINARY DECISION AND RATIONALE | |
| <i>NB: A 'YES' or 'UNKNOWN' answer to question 2b, 2d and 2e means that a certain type of impact Assessment should be undertaken. However, the type to be undertaken will depend on the response to section 4 and the rationale as assessed by the screening team.</i> | |
| Please tick accordingly if HIA will be undertaken or not | <input type="checkbox"/> HIA recommended <input type="checkbox"/> HIA not recommended |
| ✚ IF HIA IS RECOMMENDED, GO TO SECTION 4 | |
| ✚ IF HIA IS NOT RECOMMENDED, GO TO SECTION 3 | |

Section 3:

| Question 3a: Socio-political, Socio-cultural, and Socio-religious concerns | | | |
|---|---|----------------|---|
| NB: If yes, please scale the degree of affirmation in a scale of 1 to 5. With 5 being most likely and 1 being less likely. | | | |
| Question | Response {YES(Y); NO(N); DON'T KNOW(DK)} | Degree (1 – 5) | Comment (If yes, what are the concerns) |
| Does the host community or the participating stakeholders and interest groups have a history of Socio-political, Socio-cultural, and Socio-religious violence? | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there existing inter or intra Socio-political, Socio-cultural and/or Socio-religious differences or fault lines between the host community and her neighbours | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there existing inter or intra Socio-political, Socio-cultural and/or Socio-religious differences or fault lines between the various stakeholders and interest groups. | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Does the implementation of this project trigger any of the fault lines | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Is there any existing tension, resenting voices or disagreement between the various interest groups or communities in connection to the implementation of this project | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |

| Will this project unduly and unjustifiably benefit one interest group or community over the others | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
|--|---|-------------------|--|
| Total | Total number of DK | | |
| Question 3B: Health impacts of discontinuity or abandonment of project NB: If yes, please scale the degree of affirmation in a scale of 1 to 5. With 5 being most likely and 1 being less likely. | | | |
| Question | Response {YES(Y); NO(N); DON'T KNOW(DK)} | Degree (1 – 5) | Comment (If yes, what are the concerns) |
| Is there a history of project abandonment involving the stakeholders or sponsors of the proposed project | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there existing leadership concerns or foreseeable leadership concerns that can lead to project abandonment | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there resources limitations or foreseeable resources limitation that can hinder the completion and implementation of the proposed project? | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there existing conflict or foreseeable conflicts that can lead to project abandonment (conflict, in this case, might not necessarily be connected with the proposed project) | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there foreseeable market fluctuations that can lead to project abandonment? | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there observable management /administrative practices that can lead to project abandonment? | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there customary/ cultural believes that can interfere with the operations and can lead to project abandonment? | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there pending or foreseeable legal issues that can lead to project abandonment? | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Are there foreseeable natural occurrences such as natural disaster or death that can lead to project abandonment? | <input type="checkbox"/> Y <input type="checkbox"/> DK <input type="checkbox"/> N | | |
| Total | Total number of DK | | |

| | |
|---|--|
| 3C: Final Decision on Need for HIA A Delphi approach should be used by members of the screening committee to arrive at conclusions and a conclusive decision on whether to conduct an HIA should be reached. Two or more DK means sufficient information is not available so HIA should be recommended. | |
| Please tick accordingly if HIA will be undertaken or not | <input type="checkbox"/> HIA recommended <input type="checkbox"/> HIA not recommended |
| If HIA is Recommended, go to Section 4 If HIA is not Recommended, Discontinue Action | |

SECTION 4: Determination of type of HIA to be conducted

| 4a: Questions | Response: {Scaled from 0 to 5, with 0 being a state of non-existence, 1 being the lowest state possible and 5 being the highest}. | Comments |
|---|--|----------|
| What evidence base is mainly needed for the proposed HIA (type and volume) | Qualitative Quantitative Mixture of both Scale: | |
| What is the coverage or scope of the proposed project | Scale: | |
| What is the coverage of scope of the potential negative impacts | Scale: | |
| What level of community involvement is needed or anticipated | Scale: | |
| What is the effort needed to conduct the assessment or what is the dept of assessment required to conduct the HIA | Scale: | |
| What is the anticipated level of influence that the results have on policy makers and policy (To what extend will the result influence policy) | Scale: | |
| What level of resources are available for the conduct of the assessment (This include financial resources and other material resources such as baseline information and health data)? | Scale | |

| 4b: Question | Response | Comments |
|--|--|----------|
| Stage of development of the proposed project | <input type="checkbox"/> Planning <input type="checkbox"/> Consultation <input type="checkbox"/> Mobilization <input type="checkbox"/> Construction <input type="checkbox"/> Completion <input type="checkbox"/> Operational <input type="checkbox"/> Decommissioning <input type="checkbox"/> Others | |
| Other existing or foreseeable limitations. | | |

Type of HIA to be undertaken

| Please state which type of Appraisal is recommended based on the guide in table 4c below. | |
|---|--|
| Rapid HIA | |
| Intermediate HIA | |
| Comprehensive HIA | |

4C: SUPPORTING TABLE AND GUIDE TO CHOOSING THE TYPE OF HIA

| Criteria for categorization | Types | Characteristic |
|--|------------------|--|
| Temporal relationship (time with regards to stage of the intervention) | Prospective | <ul style="list-style-type: none"> Carried out before the implementation of the policy, programme or project. Predicts the consequences before it has been implemented. Lead to the prediction of consequences and the subsequent modification of decisions to mitigate harm and to maximize health (Kemmm and Parry 2004a). |
| | Concurrent | <ul style="list-style-type: none"> Runs concomitantly with the project or programme implementation. It monitors situations, identify and describe the consequences of an intervention as it is implemented. It allows early introduction of preventives measures or modification in the event of any unbearable increase in impacts. |
| | Retrospective | <ul style="list-style-type: none"> Identify the consequences of a programme or policy that has already been implemented. It provides the knowledge and information on the relationship between intervention and their consequences, which is essential for prospective HIA. |
| The scope, capacity or coverage of the HIA | Rapid or Desktop | <ul style="list-style-type: none"> Provides a broad overview of possible health impacts Analysis of existing and accessible data No new data collection Minimal resource requirement Requires shorter time(days) |
| | Intermediate | <ul style="list-style-type: none"> Provides more detailed information of possible health impacts Analysis of existing data Stakeholder and key informant analysis No new data collection but could sometimes lead to generation of new ideas Moderate resource requirement Moderate time requirement (weeks) |
| | Comprehensive | <ul style="list-style-type: none"> Provides a comprehensive assessment of potential health impacts Robust definition of impacts New data collection Participatory approaches involving stakeholders and key informants Requires Community/Stakeholders interactions and fieldwork which subsequently need more time and resources (months). |

RATIONALE

Please give a summary of the Impacts that you assume may occur because of the implementation of this project and why you think HIA should or should not be undertaken.

APPENDIX G

Appendix G: Broader List of Health Determinants.

Source: Adapted from Grinnell, 2013)

| Categories of health determinants | Specific health determinants |
|--|--|
| Socio-economic, cultural & environmental conditions | <p>International, national, and local public policies (e.g., economic, health, employment, education, defence, transport, housing, foreign, immigration, welfare policies).</p> <p>International, national, and local public/population-based services (e.g., emergency services, policing, health and social care, immigration, education, transport, welfare, childcare, leisure).</p> <p>Expressed/perceived social/cultural values and norms (e.g., discrimination, fear of discrimination, attitudes to different population groups, equity and fairness).</p> <p>Relationship between state and citizen.</p> |
| Living and working conditions (physical environment) | <p>Housing (e.g., conditions, availability).</p> <p>Working conditions (e.g., exposure to hazards).</p> <p>Quality of air, water, soil.</p> <p>Noise.</p> <p>Waste disposal.</p> <p>Energy use and sustainability of resources.</p> <p>Land use.</p> <p>Biodiversity.</p> <p>Accessibility to people, places, products.</p> |
| Social and community influences (socio-economic environment) | <p>Social support and integration.</p> <p>Social exclusion.</p> <p>Community spirit. Community involvement in public policy decision-making.</p> <p>Employment (e.g., availability, quality).</p> |

| | |
|------------------------------|---|
| | Education/training (e.g., availability, quality, affordability). |
| Individual lifestyle factors | <p>Personal behaviours (e.g., diet, activity, smoking, alcohol consumption, drug misuse).</p> <p>Personal safety.</p> <p>Employment status.</p> <p>Educational attainment.</p> <p>Income, including disposable income.</p> <p>Self-esteem and confidence.</p> <p>Attitudes, beliefs - 'locus of control.'</p> |
| Biological factors | Age, sex, genetic factors. |

Appendix H

Appendix H: Checklist for Assessing the Extent of Coverage of Health Concerns in HIA

Table: Checklist of Requirements for a standard HIA

| Area of Compliance | Degree of Compliance | Comments |
|--|--|-----------------|
| Compliance with values and principles of HIA | | |
| <p>Democracy: HIA must be participatory and must ensure inclusiveness.</p> <ul style="list-style-type: none"> • Did the practitioner or practitioner’s team take reasonable steps to identify, solicit, and utilize expertise from different discipline and community people to both identify and answer questions about potentially significant health impacts? Does the assessment procedure involve a steering community that is multidisciplinary and multi-sectoral (however, someone who is experienced in HIA must spearhead it)? • Does the HIA have an inclusive approach in its conduct and in the data generation process? Did it involve the community people or their representatives and other stakeholders? (e.g., affected community, decision-maker, and public agency). Does it ensure this inclusiveness throughout all the stags of the assessment? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |
| <p>Ethical Use of Evidence: Data generation and interpretation must be ethical and multidisciplinary. It must utilise best available approaches.</p> <ul style="list-style-type: none"> • Does the methodology utilise scientific and ethical approaches? Does it guarantee the use of best available evidence? • Does it utilised multidisciplinary approach if needed and does it encourage transparent and rigorous processes for data synthesis and interpretation. • Are valued evidence(s) used all through the assessment process to judge impacts? • Are the recommendation developed independently and impartially? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |
| <p>Equity: The spread of the health impacts across population groups should be of interest with special attention given to the fate of the vulnerable populations.</p> | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> | |

| | | |
|---|---|--|
| <ul style="list-style-type: none"> Does the baseline data, assessment process, alternatives suggested, recommendations given, and action taken (if any) considers equity and the fate of vulnerable populations? | Okay <input type="checkbox"/> High <input type="checkbox"/> Very High <input type="checkbox"/> Excellent <input type="checkbox"/> | |
| <p>Sustainable Development: HIA should consider the consequences of any reported impacts on present and future generations.</p> <ul style="list-style-type: none"> Does the HIA considers both short and long terms impacts? Does the assessed short and long-term impacts have a time scale that will serve as a guide for possible decision-making? | Very low <input type="checkbox"/> Low <input type="checkbox"/> Okay <input type="checkbox"/> High <input type="checkbox"/> Very High <input type="checkbox"/> Excellent <input type="checkbox"/> | |
| <p>Comprehensive Approach to Health: HIA considers the wider determinants of Health. It considers good physical, mental and social wellbeing as a function of the wider determinants of health.</p> <ul style="list-style-type: none"> Does the HIA considers all the wider determinants of health? | Very low <input type="checkbox"/> Low <input type="checkbox"/> Okay <input type="checkbox"/> High <input type="checkbox"/> Very High <input type="checkbox"/> Excellent <input type="checkbox"/> | |
| <p>Methodological compliance with methods and approaches of HIA</p> <p>HIA has acceptable steps for the assessment of health impacts from projects, policies, or programmes. They include screening, scoping, appraisal or assessment, reporting, monitoring, and evaluation. Various methods are deployed within each step to carry out the function of that step</p> | | |
| <p>Screening: Screening determines whether there is need to carry out an HIA or not.</p> <ul style="list-style-type: none"> Was there a fully documented screening exercise? Does the screening process consider stakeholders concerns on potential impacts? Did the screening consider all possible impacts on all the wider determinants of health? Did the screening consider vulnerable population groups? Did the screening consider the potential of the HIA to add new information and influence policy decision making? Did the screening consider the resources and technical capacity of the sponsors to conduct an HIA? | Very low <input type="checkbox"/> Low <input type="checkbox"/> Okay <input type="checkbox"/> High <input type="checkbox"/> Very High <input type="checkbox"/> Excellent <input type="checkbox"/> | |

| | | |
|--|--|--|
| <ul style="list-style-type: none"> • Did the screening consider the availability of alternative effective and perhaps easier approaches to evaluate and communicate the potential impacts? | | |
| <p>Scoping (Policy Analysis, Planning): Drafting the assessment plan or project plan is the main task at this stage. It also entails a decision on the depth of the HIA and the type of appraisal tool to be utilised.</p> <ul style="list-style-type: none"> • Does the scoping process involve the constitution of a steering group? • Does the scoping process state the terms of reference for the steering group? • Does the result of the scoping process include clearly defined goals and anticipated outcomes? • Does the scoping process identify and outline detailed plan of actions that will guide the HIA process? Such plan of actions should clearly identify: <ul style="list-style-type: none"> i. Geographical and demographic boundaries to be considered for possible impact ii. Significant health impacts of interest iii. Clearly identified research questions and appropriate research methods. This includes approaches for analysis, evaluation, and characterisation of impacts. iv. Sources of evidence v. Role sharing for all members of team including the role of key informants and other stakeholders. Identification of relevant stakeholders, key informants, and other interest groups. vi. Agreed reporting format and the pattern of external review. vii. Dissemination techniques, and approaches for evaluation. • Does the Scoping process provide a detailed plan for stakeholder’s engagement? This includes the identification of stakeholders, designing of level and mode of participation to encourage maximum response • Does the process consider the Identification of all range of health issues to be assessed and prioritizing the health issues? • Does the Scoping identify methods and techniques that will be utilised in evaluating the identified health issues? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |

| | | |
|---|--|--|
| <p>Appraisal or Assessment (Profiling of affected communities, Involving Stakeholders & key informants, Evaluating the magnitude and significance of potential impacts)</p> <ul style="list-style-type: none"> • Does the assessment contain detailed information on the methods and procedure use in analysing all potential health impacts? • Does the report justify the choice of methods for analysis? • Does the assessment present detailed information on baseline or pre-existing conditions and clearly identifying the health conditions of vulnerable populations? • Does the assessment process synthesis and utilise best available evidence taking into consideration the quality of evidence used? • Does it exhaustively identify all relevant health determinants? • Does the assessment follow appropriate evidenced based and scientific approach? Does the process follow scientific methods of analysis as identified in the scoping stage? • Does the assessment process categorise the identified health issues to prioritise or analyse them? Possible index of categorization include magnitude, distribution within the population, direction, severity, likelihood, etc. • Does the Assessment process identify and acknowledge inherent and unavoidable methodological assumptions, limitations, biases as well as strengths? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |
| <p>Recommendations (Consideration of alternative options & Recommendations)</p> <p>Recommendation and Reporting:</p> <ul style="list-style-type: none"> • Does the HIA include adequate recommendations to manage the identified health and equity impacts? Does it identify specific mitigation plans or alternative plans? • Does it identify specific mitigation plans or alternative plans to enhance or increase health benefits? • Does the recommendation identify areas where ‘no actions’ were needed and areas where there were no sufficient data for complete analysis and recommendation? • Does the recommendation consider inputs from communities, relevant stakeholders, experts, and decision makers? This is needed to enhance the implementability of the recommendations. | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |

| | | |
|---|--|--|
| <ul style="list-style-type: none"> Are the recommendations implementable and possible to be incorporated in the Health Management Plan with clear outlines on management structure, responsibilities, deadline, engagement activities, potential partnerships, and monitoring? | | |
| <p>Reporting: A formal report should be presented at the end of the HIA process:</p> <ul style="list-style-type: none"> Does the report present the purpose, processes and methods, findings, and the recommendations? Does the report include the policy profile for the HIA? Does the report include a summary of the findings in a succinct and easy to understand format? Does the report identify all those contributing to the formation of the HIA and their roles? These may include the sponsors, sources of funding, the team executing the HIA and all other participants. Does the report contain exhaustive details of the various health issues analysed? Such details as scientific evidence, data source(s), analytic method, and rationale for usage. Other details may also include profile of existing conditions, result of analysis, degree of impact (from the hierarchy previously generated) and list of corresponding recommendations. The limitations involve in the analysis of each health impact should also accompany the report. Does the report indicate that the entire processes were sufficiently reviewed and critiqued by stakeholders, experts, and decision makers? Is the report presented in a format that is readily available and accessible to all stakeholders and interested parties? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |
| <p>Monitoring and evaluation: The responsibility of monitoring is most often outside the scope of a defined HIA process; however, the report should contain proposed guidelines for the monitoring process. The evaluation process is mainly classified into process evaluation, impact evaluation and outcome evaluation. Clarity should be made on the type of evaluation covered in the report. Process evaluation is often covered within the HIA process.</p> <ul style="list-style-type: none"> Does the report indicate that there was a process evaluation for the HIA process? Is the procedure detailed out in the report? Is there a provision for monitoring and evaluation in the final report? Does the report clearly identify requirements and resources needed for the monitoring and evaluation process? Does the proposed guideline contain proposed short- and long-term monitoring goals? Does the report identify the scope for the monitoring and evaluation process with clearly defined thresholds for reviews? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |

| | | |
|--|--|--|
| <ul style="list-style-type: none">Does the report make provision for the reporting of monitoring outcomes? | | |
| COMPLIANCE IN TERMS OF CONTENT AND SCOPE OF COVERAGE OF HEALTH IMPACTS | | |

| | | |
|---|--|--|
| <p>Coverage of Health determinant and outcome in Baseline information. Baseline information on current state of health status, health determinants, and their distribution are a requirement for an effective appraisal of health impacts.</p> <ul style="list-style-type: none"> • Does the report contain detailed outline of the require background information? • Does the report contain sufficient background information on all relevant health determinants? Health determinants include Institutional factors; Social environment; Physical environment; Economic environment; and the person’s individual characteristics and behaviours. • Does it contain sufficient background information on all relevant indicators for health outcome? Indices for health outcomes include life expectancy; Mortality rate; Birth rate; Hospital admissions; standard of living, Quality Adjusted Life Years (QALYs), and Disability-adjusted life years (DALYs). • Does it contain sufficient background information of all relevant demographic data for all population groups? • Does it contain sufficient background information on the distribution of various health indicators amongst different population groups, taking into account the state of vulnerable population groups? Example of such tool is the Gini Index • Does it contain sufficient background information on the historical background of the communities involve? • Does it contain sufficient background information on the historical background of the project, plan or policy involved and the sponsors? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |
|---|--|--|

| | | |
|---|--|--|
| <p>Coverage of Health determinant and outcome in the Assessment of impacts</p> <p>Appraisal or Assessment of impacts:</p> <ul style="list-style-type: none"> • Does the assessment adhere to all the conditions in the appraisal stage of this checklist? • Does the assessment adequately relate the analysed impacts to their potential effects on health outcomes? Does the assessment identify all possible health outcomes that can be affected as a result of identified health impacts? Indices for health outcomes include life expectancy; Mortality rate; Birth rate; Hospital admissions; standard of living, Quality Adjusted Life Years (QALYs), and Disability-adjusted life years (DALYs). • Does the assessment sufficiently consider the distribution of the assessed impact and any accompanying health outcome taking into consideration their impact on vulnerable population groups? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |
| <p>Coverage of Health determinant and outcome in the final recommendations</p> <p>Recommendations:</p> <ul style="list-style-type: none"> • Does the assessment adhere to all the conditions in the recommendation stage of this checklist? • Does the recommendation adequately provide alternative plans or mitigation approaches to address all health impacts identified and relate same to their effects on health outcomes? • Does the recommendation include mitigations or alternatives to address any inequality or equity issue that may have been identified during the assessment? | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> <p>Excellent <input type="checkbox"/></p> | |
| <p>Does it exhaustively consider all possible health outcomes including unreported cases, feeling and general effect on standard of living</p> | <p>Very low <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Okay <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input type="checkbox"/></p> | |

| | | |
|--|------------------------------------|--|
| | Excellent <input type="checkbox"/> | |
|--|------------------------------------|--|

General guide for use of Checklist in Appendix B:

The grading process and subsequent analysis and interpretation is entirely at the discretion of the reviewing panel. A panel of qualified experts is recommended to be constituted for use of checklist and a Delphi approach is recommended for use at arriving at conclusions. The checklist is designed to serve as a guide in analysing the level of compliance with HIA standards and coverage of health concerns.

The panel has the responsibility of exhaustively identifying relevant health determinants and their corresponding health outcomes. This is because of the varying nature of impacts from different project, policies or programmes.

APPENDIX I:

Appendix I: The Nigerian Regulatory framework: Relevant Regulatory authorities and key enforcement procedures

Regulatory framework

Federal Government laws, regulations, and guidelines:

- Federal Ministry of Environment (FMoE, formerly FEPA (Federal Environmental Protection Agency)) Act No. 58, 1988. Subsequent additions to this act include the National Policy on the Environment (1989), the Nigeria's National Agenda 21 (1999), the National Guidelines on Waste Disposal through Underground Injection (1999), the National Guidelines and Standards for Environmental Protection (1991), National Guidelines for Spilled Oil Fingerprinting (Act 14 of 1999), etc.
- Harmful Waste (Special Criminal Provisions etc) Act (Cap H1 LFN 2004). The disposal of harmful waste on land and territorial water is regulated by this law.
- National Environmental Standards Regulations and Enforcement Agency (Establishment) Act 2007 (NESREAA). Legislative guidelines under this act also includes the 33 Regulations made by the Minister of Environment under section 34 of the Act.
- The Environmental Impact Assessment Act No. 86 of 1992 (FMoE): This act gave the general guideline and methods to the practice of EIA in various sectors.
- Endangered Species (Control of International Trade and Traffic) Act (Cap E9 LFN 2004). The provision of this law regulates all activities relating to the management and conservation of endangered species and other wildlife.
- Nigerian Minerals and Mining Act 2007. This act repealed the Minerals and Mining Act No. 34 of 1999 and seeks to regulate all solid mineral exploration and exploitation activities.
- National Oil Spill, Detection and Response Agency Act 2006 (NOSDRA). This law establishes and empowers an independent agency to coordinate and implement the National oil spill contingency plan. This was to ensure that the national response to oil spills or oil pollution is swift, safe effective and proportionate.

- National Park Services Act (Cap N65 LFN 2004). This act provides for the establishment of the National Park Service of Nigeria and its Governing Board. It provided for the protection of all national parks and the conservation of natural resources.
- Nuclear Safety and Radiation Protection Act No. 19 of 1995.: The act provides for the Establishment of the Nigerian Nuclear Regulatory Authority and its Governing Board. It ultimately regulates the use of radioactive substances and the control of ionizing radiation.
- Water Resources Act (Cap W2 LFN 2004). This Act regulates the use of water resources and seeks to optimise and protect available water resources. The Act has been amended as the Water Resources (Amendment) Act 2016.
- Oil In Navigable Waters Act: The Act made provisions for the prevention of oil pollution of the navigable waters of Nigeria in line with International Convention. It commenced on 22nd April 1968. It primarily prohibits irresponsible discharge of oil into Nigerian territorial waters and shorelines.
- Hydrocarbon Oil Refineries Act [1965 No. 17]: according to the Act, it is aimed at making “provision for the licensing and control of the refining of hydrocarbon oils for purposes of excise and for matters connected therewith”.
- Nigeria’s National Agenda 21 (1992): This was the Nigerian response to the Rio Declaration on Environment and Development. A response to the United Nations conference on Environment and Development (UNCED). It produced a Statement of principles for the Sustainable Management of Forests and sustainable development in general and calls for political commitments at the highest level.
- Forestry Law, CAP 51, 1994: The law provides for the establishment of forestry trust fund, board of trustees and appraisal committee. it ultimately controlled and preserved all forest reserves, protected forests, and specially protected forests.
- Land Use Act of 1978: This at sort to correct an existing land tenure system. The Act states that “all land comprised in the territory of each State (except land vested in the Federal Government or its agencies) is vested solely in the Governor of the State, who would hold such land in trust for the people”.
- The Endangered Species (Control of International Trade and Traffic Act, No.11 of 1985): The act provides for the prohibition of hunting of or trading in wild animals and the regulation of export and import of some species or wildlife. The Act states that it “provides for the conservation and management of Nigeria's wildlife and the protection of some of her endangered species in danger of extinction as a result of

overexploitation, as required under certain international treaties to which Nigeria is a signatory”.

- Associated Gas Re-Injection Act No. 99 of 1979 (CAP 26): According to the Act, it is “an Act to compel every company producing oil and gas in Nigeria to submit preliminary programmes for gas re-injection and detailed plans for implementation of gas re-injection”. It is aimed at preventing gas flaring.
- Environmental Guidelines and Standards for the Petroleum Industry in Nigeria, 2002: The guideline was an update of previous environment’s guidelines and standards and was aimed at strengthening the regulatory activities of the Department of Petroleum Resources in ensuring that petroleum industry operators do not degrade the environment.
- The Petroleum Act No. 51 of 1969: This act primarily vested the ownership of all on-shore and off-shore revenue from petroleum resources in the Federal Government. It provides for the regulation of petroleum exploration from the Nigerian territorial waters and its continental shelf. In subsequent years, it has produced many subsidiary regulations which include:
 - I. Mineral Oils (Safety Regulations 1997.
 - II. Petroleum regulations
 - III. Petroleum (Drilling and production) Regulations
 - IV. Petroleum Refining Regulation
 - V. Crude Oil (Transportation and shipment) Regulations.
 - VI. National Data repository Regulation 1997

Other Federal Government laws, regulations, and guidelines:

- S.I.8 - National Environmental Protection (Effluent Limitations) Regulations of 1991
- S.I.9 – National Environmental Protection (Pollution Abatement in Industries and Facilities Generation Wastes)
- S.I.15 – National Environmental Protection (Management of Solid and Hazardous Wastes) Regulations of 1991
- The Petroleum Drilling and Production Regulations – 1969
- The Oil Pipeline Act and Oil and Gas Pipeline Regulation of 1995
- National Inland Waterways Authority (NIWA) Act 13 of 1997
- Factory Act, 1992
- Revised National Health Policy, 2004
- National Health Act, 2005

- Nigerian Ports Authority Act No 38 of 1999
- Urban and Regional Planning Law, Decree 88 of 1992
- FMOH Sectoral and Procedural Guidelines for Oil and Gas (1995)
- Oil Pipelines Ordinances (CAP) 145, 1956 and Oil Pipelines Act, 1965
- National Inland Waterways Authority (NIWA) Act 13 of 1997

International Conventions, Agreements, Regulations, Guidelines and Standards

Most common international convention, regulations and standards that are often referred to or that are relevant to the impact assessment process in the Niger delta region include:

- World Bank Guidelines on Environmental Assessment (EA) (1991)
- International Finance cooperation (IFC) Performance Standards on Environmental and Social Sustainability 2012
- International Union for Conservation of Nature and Natural Resources (IUCN) Guidelines (1996)
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention, 1979)
- Convention on Biological Diversity (1992)
- Convention Concerning the Protection of the World Cultural and Natural Heritage Sites (or World Heritage Convention, 1978)
- Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (1987)
- United Nations Framework Convention on Climatic Change (1992)

State regulations

- States Environment and Development Planning Edict of 1999
- State Government Environment Protection Agency Laws
- State Government Environmental Protection Agency (ISEPA) Guidelines and Standards for Environmental Pollution Control (A highlight), 1997.
- State Government Private Health and Allied Establishments Authority Law
- State Government Public Health Law,
- State Government Noise Pollution Control Law

Table Showing Most Relevant Regulatory authorities and their key enforcement procedures

| Key Regulatory authorities | Key Regulatory enforcement procedures /actions | Key stakeholders and partners |
|--|--|---|
| <ul style="list-style-type: none"> ❖ National Environmental Standards and Regulations Enforcement Agency (NESREA). ❖ National Oil Spill Detection and Response Agency. ❖ Federal Ministry of Environment. ❖ Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA) ❖ Nigerian Upstream Petroleum Regulatory Commission (NUPRC). ❖ Nigerian Nuclear Regulatory Authority. ❖ Federal Ministry of Water Resources ❖ National Oil spill Detection and Response Agency (NOSDRA) ❖ National Biosafety Management Agency ❖ Department of Climate Change ❖ Energy Commission of Nigeria ❖ Erosion, Floods and Coastal Zone Management ❖ Department of Planning, Research and Statistics ❖ Drought and Desertification Agency ❖ States Environmental Protection Agencies (SEPA) or Environmental Protection and Waste Management Agencies (EPWMA) | <p>The key elements of the agency’s enforcement strategies are:</p> <ul style="list-style-type: none"> • Inspection. • Compliance monitoring. • Negotiation. • Legal action. • Prosecution. <p>Some of the methods of enforcement are:</p> <ol style="list-style-type: none"> I. Issue of permits and licences. II. Issue of prohibition and enforcement notices. III. Variation of licence conditions. IV. Implementing the “polluter pays” principle. V. Suspension and/or revocation of permits and licences. VI. Injunction and carrying out of remedial works. | <ul style="list-style-type: none"> ❖ Project proponents and their representatives, ❖ Regulators and their representatives, ❖ Community dwellers and their representatives ❖ Independent Consultants and their representatives ❖ Consulting firms and their representatives, ❖ Other law enforcement agencies ❖ Government representatives (federal, state, and local government representatives). ❖ NGOs and other interested parties e.g., union of practitioners, academic researchers, donor agencies etc. some of these may include: ❖ Civil society organisations (CSOs). ❖ State planning authorities. ❖ Community based organisations (CBOs). ❖ Faith based organisations (FBOs). ❖ Non-governmental organisations (NGOs). ❖ International community and donor agencies. |

APPENDIX I:

Appendix J: List of Included EIA Reports for Study Three

| EIA Title | Year of Publication | Project Sector/ Project Proponent |
|---|---------------------|---|
| Azura-Edo Independent Power Project | 2012 | Electrical, OIL AND GAS |
| Itigidi, Obubra and Okpoma Water Distribution and Supply Schemes Project: Environmental and Social Impact Assessment | 2012 | Water supply, Government |
| Environmental and Social Impact Assessment (ESIA) for Bembridge Project in Okwangwo Division of Cross River National Park | 2014 | Construction, Cross River State Government. |
| Environmental and Social Impact Assessment (ESIA) Report for the Proposed Dangote Oil/Petroleum Refinery Project at Lekki Free Zone, Ibeju-Lekki Local Government Area, Lagos State | 2015 | Oil and Gas, Dangote Company |
| Federal University of Otuoke Bayelsa Environmental Impact Assessment (EIA) | 2013 | Education sector, Federal Government |
| Environmental Impact Assessment (EIA) of the Assa North - Ohaji South Gas Development Project (the Facilities) at Ohaji/Egbema LGA, Imo State | 2015 | Oil and Gas, Shell petroleum |
| Transmission Company of Nigeria: Environmental Impact Assessment | 2012 | Power sector, PHCN |
| Environmental Impact Assessment of Joint Venture Power Plant Project Mobil Producing Nigeria Unlimited | 2013 | Power Sector, Mobil |
| Environmental Impact Assessment (EIA) Of Dodo North Non-Associated Gas (NAG) Wells Development Project in Ekeremor Local Government Area, Bayelsa State | 2015 | Oil and Gas, Shell Petroleum |
| Environmental Impact Assessment (EIA) Of Otumara Associated Gas Solution (AGS) Project in Warri South LGA, Delta State | 2015 | Oils and Gas, Shell Petroleum |
| Environmental Impact Assessment (EIA) of Saghara Associated Gas Solution (AGS) Project in Warri South LGA, Delta State | 2015 | Oils and Gas, Shell Petroleum |
| Environmental Impact Assessment of Soku Gas Plant-San Barth Manifold Pipeline Project. | 2013 | Oils and Gas, Shell Petroleum |
| Agura Independent Power Project. Environmental Impact Assessment, Ikorodu LGA, Lagos State. | 2013 | Power/ Oil and Gas, Chevron Nigeria Limited |
| Environmental and Social Impact Assessment Report. Rural Access and Mobility Project (RAMP), Enugu State | 2012 | Construction, Federal Government |
| Environmental Impact Assessment (EIA) Report for The Adibawa-Gbaran 3d Reshoot Seismic Data Acquisition Project in Bayelsa and Rivers States | 2015 | Oils and Gas, Shell Petroleum |
| Environmental Impact Assessment (EIA) of the Proposed EA/EJA Field. Bayelsa State | 2016 | Oils and Gas, Shell Petroleum |
| Environmental Impact Assessment (EIA) of Agbada Non-Associated Gas (Nag) Project in Obio Akpor LGA, Rivers State | 2015 | Oils and Gas, Shell Petroleum |
| Environmental Impact Assessment (EIA) of the Iseni Wells Early Hookup to Domestic Gas Project in Sagbama, Ekeremor | 2017 | Oils and Gas, Shell Petroleum |

| | | |
|--|------|-------------------------------|
| and Patani Local Government Areas of Bayelsa and Delta States | | |
| Environmental Impact Assessment Report for OML 77 and 74 3D Seismic Reshoot Data Acquisition Project in Akuku-Toru, Degema Local and Brass Local Government Areas of Rivers and Bayelsa States | 2019 | Oils and Gas, Shell Petroleum |
| Environmental Impact Assessment Revalidation of Forcados-Yokri Integrated Project (Non-Associated Gas Well) | 2018 | Oils and Gas, Shell Petroleum |

Appendix K: Nigeria and the Niger Delta Contexts

9.1. Introduction

The chapter presents a brief description of the Niger delta region and the Nigerian state and introduces the practice of Integrated Impact Assessment (IIA) with especial reference to Environmental Impact Assessment (EIA) in the region. The Niger Delta region is the region where the primary data for the research was collected.

The chapter provides the background information on the Nigerian state, its economy and geography before going ahead to describe the history, population, geographical location, and the economic potentials of the Niger Delta region. It demonstrates the link between the region's socio-economic potentials and the attendant exploitation and/or development. It also establishes the connection between the activities of major oil companies in the region, and the continuous state of restiveness, and the feeling of marginalisation by the indigenes of the region, which have led to political crises.

9.2. The Nigerian Nation

Nigeria is Africa's most populous country with an estimated population of about 206.139587 million people as at 2020 (World Bank, 2020). It occupies a total area of about 923,768 km² (World Bank, 2019). The country has an estimated annual growth rate that ranges between 2.8 and 3.2 percent. It lies between Latitude 9°04'39.90" N and Longitude 8°40'38.84" E as shown in Figure 9.1. It shares its borders with the Republic of Chad in the northeast, the Cameroon in the east, the Republic of Benin in the west, the Niger Republic in the north and the Atlantic Ocean in the south. Nigeria had her independence from Britain in 1960 and presently has one of the largest population of youths in the world (Echefu and Akpofure, 2002; World Bank, 2019). The northern part of the country is mainly flat and sparsely vegetated, consistent with the dry savannah climate, while the southern part has the thick and highly vegetated vegetation that is consistent with the tropical rain forest, with hilly and mountainous topography in the southeast. The average rainfall varies between 2,000 mm/year in the South and about 500 mm/year in the North. Spanning from the semi-arid ecosystem and the savannahs of the north through the mangrove and rain forest region of the south, Nigeria's rich endowment in mineral resources, wildlife, medicinal

plants, timber, water, and food crops has enabled its environment to provide the necessary life support for all developmental aspirations (Nwoko, 2013).

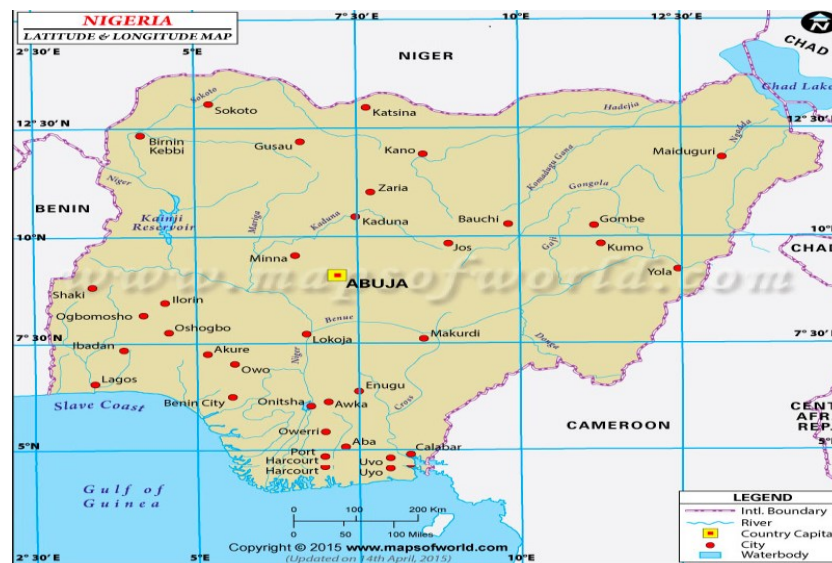


Figure 9.1. The Nigerian Latitudinal and Longitudinal Map.

Source: www.mapsofworld.com

The sparsely vegetated northern region (savannah grasslands) is made up of the Sahel Savannah, the Guinea Savannah, and the Sudan Savannah while the thick and highly vegetated southern region (the tropical rain forest) is made up of the Tropical evergreen forest, the Saline water swamp, and the Freshwater swamp. Some of the traditional agricultural activities supported by the tropical rain forest vegetation include forestry, timber production and trade, and the cultivation of fruit and economic trees (e.g., citrus, raffia palm, oil palm, rubber, cocoa etc). The region is also suitable for the production of domestic crops such as casava, Okra, yam etc. The northern savannah vegetation mostly supports grains production and animal husbandry. Typical agricultural products from the region include groundnuts, vegetables, cotton, tubers, grasses, and cattle.

Politically, Nigeria is a federation of 36 states. Each state is subdivided into Local Government areas (LGA) and the subdivisions adds up to a total of 774 LGAs. The country also has a Federal Capital Territory (FCT), also known as Abuja, as its political and administrative headquarters. The FCT does not serve as a state but is administered by a Federal Minister appointed by the President as part of his cabinet. The governing structure in the country is a three-tier system of government with the Federal, State and Local Governments making up different tiers of Government. The

Nigerian Geographical map is presented in figure 9.2 and shows the 36 states of the federation and the Federal Capital Territory of Abuja.



Figure 9.2: The Nigerian Geographical Map.

Source: [Nigeria-State-Map.png \(2000x1682\) \(gisgeography.com\)](#).

The country is often said to have the largest natural gas reserves in Africa and is Africa's biggest exporter of oil (World Bank, 2019). The country's reliance on oil and gas production and export, coupled with the lack of suitable policies to regulate its practices, has led to a catastrophic and unmitigated assault on the environment prior to the advent of the Federal Environmental Protection Agency (FEPA).

9.2.1 The Nigerian Economy

The Nigerian economy is classed as a middle-income economy. It operates a mixed economic system and remains an emerging market within the global economy. The Nigerian economic market has an increasingly expanding financial, manufacturing, service, technology, communication, and entertainment sector (NNA, 2020; NPC, 2019). The country made promising improvements in its economic growth especially between 2012 and 2014. Its nominal gross domestic product (GDP) peaked at about 546.676 billion USD in 2014 with a growth rate of about 7.0% (World Bank, 2020). The economy took a great leap after its GDP from 1990 to 2010 was rebased in April 2014 (International Business Publication, 2016). The rebasing increased the estimated size of the economy by about 80 percent, which led to its emergence as the largest

economy in Africa (Barungi, 2014); International Business Publication, 2016). Between 2015 and 2016, a temporary economic downturn resulting from the fluctuations in oil market values affected the Nigerian economy which is highly dependent on revenues from the oil and gas sector (NPC 2019, USAID, 2020). The recovery from the 2016 recession was promising but the Nigerian economy further entered a recession in 2020. The later stage of recession subsequently reversed the 2017 to 2019 recovery period. Apart from the decline in global oil prices due to decreasing global demand and increasing environmental concerns, the 2020 recession was also attributed to the global reaction to the spread of Covid-19 (AFDB, 2021). It is estimated that the nominal GDP shrunk by about 3% despite intervention measures from the Economic Sustainability Programme (ESP) (AFDB, 2021). The variations in the national GDP between 2019 and 2021 is presented in Figure 9.3. The inflation rate also rose from 11.4 percent in 2019 to 13.25 percent in 2020 and was further projected to rise to about 16.91 percent in 2021 (IMF, 2021)

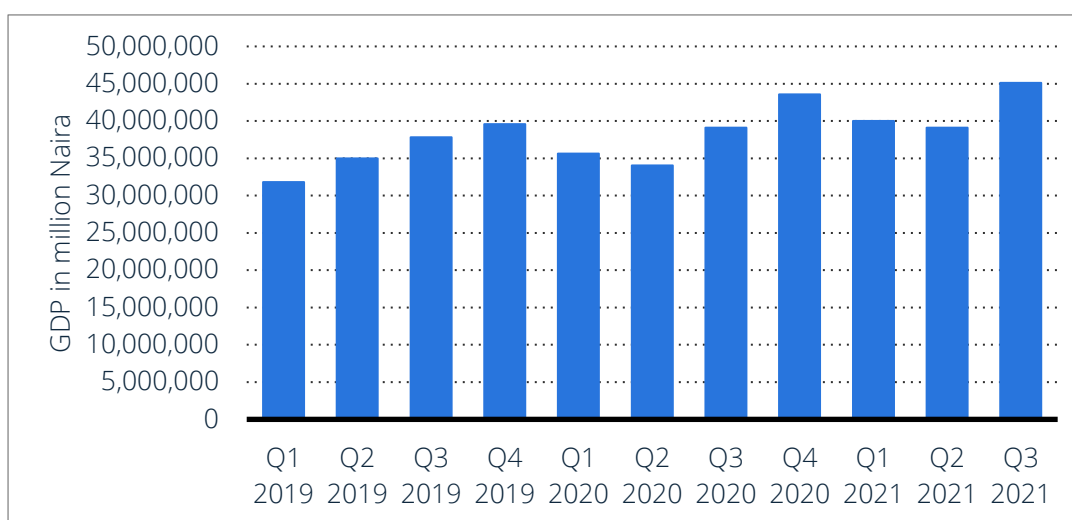


Figure 9.3: Gross Domestic Product (GDP) of Nigeria from the 1st quarter of 2019 to the 3rd quarter of 2021 Source: NBS, 2021A: [ID 1207926](#):

As at 2021, the Nigerian economy was ranked as the 29th largest economy in the world in terms of nominal GDP with a GDP of about 480.48 billion USD (IMF, 2021). It contributed about 0.0507 percent to the global GDP in 2021 and its annual growth rate for the 2021 year ending stood at about 2.64 percent (IMF, 2021). In terms of the nominal GDP per capita, the country is ranked at the 145th position with a total of 2,273 USD per person in 2021 (IMF, 2021). Various projections have been made for the Nigerian Economy in 2022. The World Bank projects a 2.8 percent growth rate while

the IMF and the AFDB projects a 2.7 and a 2.9 percent growth rate respectively. The inflation rate is also projected to be about 13.25 percent in 2022, an improvement from the 2021 figure WHICH was estimated at 16.91 percent (Figure 9.4).

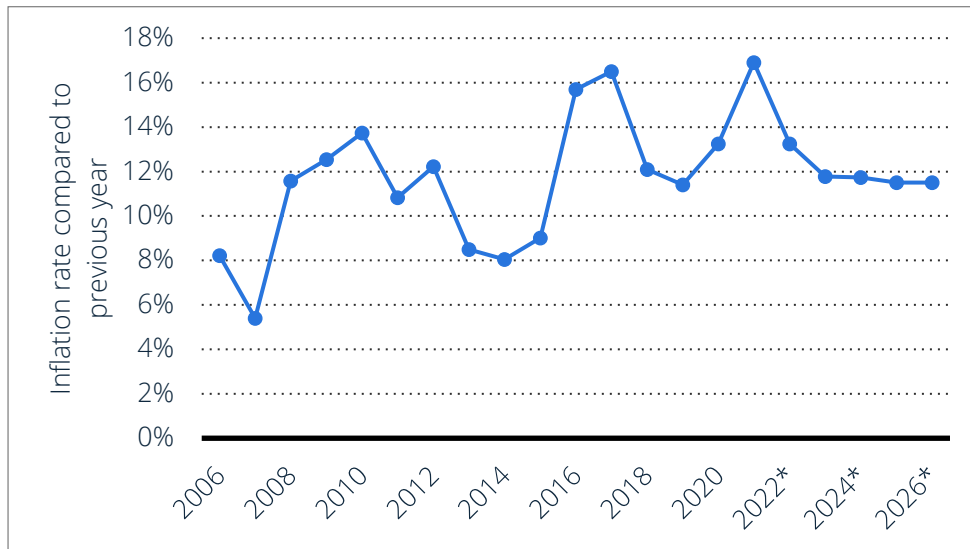


Figure 9.4: Nigeria: Inflation rate from 2006 to 2026. (*projections) Source(s): IMF; [ID 383132](#)

The economic realities in Nigeria have affected its desire to attain the United Nations sustainable development goals (SDG). The countries 2020 Voluntary National Review (VNR) on Sustainable Development Goals (SDGs) focused on Gender equality, poverty, health and wellbeing, education, inclusive economy, partnership, and enabling environment of peace and security. Its performance in these key interest areas of the SDGs is considered low despite encouraging improvements (UNDP, 2020). The country had a human development index of 0.539 in 2020 and was ranked as 161st out of the 189 countries in the United Nations Human development index (UNDP, 2020)

The oil and gas sector remains the mainstay of the Nigerian economy and contributes about 88 percent of total foreign exchange earnings. Although it contributed less than 10 percent to the country's GDP between 2019 and 2021, it contributes about 65 percent of total budgetary revenue in 2020 (NBS, 2021A). Oil exploration has continued to contribute immensely to the devastation of the environment. According to the United States Energy and Information Administration (2021), Nigeria's volume of oil and gas production as of 2021 is ranked the highest in Africa and 11th in the world. Other industries from the non-oil sector contributed more to the nations GDP

but less to its budgetary revenues. Some of these industries fall within the manufacturing sector which contributed about 13 percent of the GDP in 2020. Some major industries in the country include the Iron and Steel companies, Aluminium Smelting Company, the National Fertilizer Company of Nigeria, and the Nigeria Liquified Natural Gas Limited.

The Niger Delta region serves as the concentration point, and operational base for the activities of the oil and gas industries. This informed the focus of this research on the region. The region is most affected by the devastating impacts of oil exploration, including environmental degradation (Ugboma (2015: 84). Adetunji (2006) highlights the failures of government to effectively enforce its laws on the control of environmental pollution despite being a signatory to several treaties on environmental sustainability. Ugboma (2015) identified the practice of EIA as one of the strategies adopted by government to combat environmental degradation. It is important to ensure that EIA is practiced appropriately so that it remains effective in its primary objective. It is also important to ensure that the effects of environmental degradation on human health is appropriately addressed when carrying out EIA via the holistic incorporation of health in EIA.

9.3 The Niger Delta Region

The present-day Niger Delta region was referred to as the British Oil Rivers Protectorate from 1885 to 1893 and later added to what eventually became the Niger Coast Protectorate after the British government assumed direct control of the Royal Niger Company (Okonta and Douglas, 2003). The region was later made part of the Eastern Region which was created in 1951 (Okonta and Douglas, 2003). Within the eastern region, people from the region became minorities in political affairs due to the presence of the larger Igbo ethnic group. They began to agitate for separation of political governance. The Niger Delta people were people from the present-day Ogoni, Ijaw, Efik, Ibibio, Igbo, Annang, Oron, Itsekiri, and Ogoga ethnic groups (MDBMG, 2021).

Subsequent political struggles by the people of the region due to marginalisation in the old eastern region led to the creation of two separate states in 1967 to accommodate the minorities from the former eastern region (Okonta and Douglas, 2003). The two new states created for the Niger delta people were South-eastern

State, and Rivers State. With increasing oil exploration in the region, communities with oil explorative activities have been collectively regarded as the Niger Delta region for political convenience and the sharing of oil revenue. This led to the description of the region in political and geographic terms. The region within the littoral States of Rivers, Bayelsa, Delta, Cross River, and Akwa Ibom are geographically regarded as the Niger Delta. They collectively have a population of about 16.331 million people and host about 1500 communities (Umar *et al.*, 2021). The areas politically regarded as the Niger delta region have been expanded to include Abia, Edo, Imo and Ondo states.

Currently, the Nigerian states that makes up the Niger Delta Region in political terms include, Abia, Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Imo, Ondo, and Rivers States (Ajodo-Adebanjoko, 2017). For the purposes of this research, these nine southern states would be referred to as the Niger delta region. The region's population was estimated at about 31.3 million by the NPC in its 2006 census (Ike and Emaziye, 2012; Ajodo-Adebanjoko, 2017). The demography of the region shows a youthful (Abasiubong *et al.*, 2010) and dense population (Uduji *et al.*, 2019), prone to violence and closely linked to oil exploration. Table 9.1 shows the broader demographic characteristic of the region including the numerous ethnic nationalities and pressure groups that have evolved due to conflicts linked to oil explorative activities (Uduji *et al.*, 2019). The table also shows the abundance of oil reserves within the region. The incessant crises within the region and the effect of constant environmental exploration due to high oil reserves have resulted in more environmental and health issues, hence the focus of this research work within the region.

Table 9.1: Demographic Characteristics of the Nigerian Niger Delta Communities.

| Demographic Characteristics of the Nigerian Niger Delta Communities. | | | | | | | | |
|--|-------------------|------------------------------|---|-----------------|-----------------------|-------------------------|-----------------------------------|--------------------------------------|
| State | 2006 Population | Land Area (km ²) | Major Ethnic groups | Violence Levels | Production of oil (%) | location of oil reserve | Major Oil companies | Movement Groups |
| Akwa Ibom | 3,902,051 | 8412 | Ibibio, Anang and oron | Significant | 45 | Offshore | Exxon Mobil, Shell, Agip | MEND, Afigh Ekid, NDA |
| Abia | 2,881,380 | 5834 | Igbo | Moderate | 10 | Offshore/ On Shore | Shell, Agip, Total | IPOB, MASSOB, Niger Delta Avengers |
| Bayelsa | 1,704,515 | 10,773 | Ijaw, Nembe, Ogbia and Epie-Atissa | High | 40 | Offshore/ On Shore | Exxon Mobile, Shell, Agip, Total | MEND, IYC, Delta Avengers |
| Cross River | 2,892,988 | 13,564 | Efik, Ibibio, Annang, oron, Yakkur Ogoja, Itigidi | Moderate | 12 | Offshore/ On Shore | Shell, Agip, Total | MEND, IWAAD, Ekid Delta Avengers |
| Delta | 4,112,445 | 16,842 | Urhobo, Ijaw, Isoko, Itsekeri, and Anioma | High | 38 | Offshore/ On Shore | Shell Chevron, Total | IYC, UEF, MEND, Niger Delta Avengers |
| Edo | 3,233,366 | 14,825 | Benin, Ishan, Akokoedo, Etsako, Esan Owan | Low | 18 | Offshore/ On Shore | Shell, Agip, Total | Egbesu, MEND, Niger Delta Avengers |
| Imo | 3,927,563 | 5100 | Igbo, Ndoni | Moderate | 10 | Offshore/ On Shore | Shell, Agip, Total | IPOB, MASSOB, Niger Delta Avengers |
| Ondo | 3,460,877 | 12,432 | Ijaw, Yoruba, Epie-Atissa | Moderate | 10 | Offshore/ On Shore | Shell Chevron, Total | OPC, MEND, Niger Delta Avengers |
| Rivers | 5,198,716 | 11,077 | Ndoni, Ijaw and Ikwere, Ogoni | High | 40 | Offshore/ On Shore | Shell Chevron, Total, Halliburton | MOSOP and MEND, NDA |
| Total | 31,313,901 | | | | | | | |

IYC : Itsekiri Youth Council
 UEF: Urhobo Economic foundation

MASSOB: Movement for the Actualization of the Sovereign State of Biafra
 MEND: Movement for the Emancipation of the Niger Delta

IPOB: Indigenous People of Biafra
 NDA: Niger Delta Avengers

OPC: Oodua People's Congress
 MASOP: Movement for the Survival of Ogoni People

SOURCE: Uduji, et al., 2019 with Authors inputs.

9.3.1 Geography and Location

As noted above, the Niger Delta region comprises nine southern states whose communities host petroleum and gas exploration activities. The region cuts across three geopolitical zones in the country: the south-south, the southeast, and the southwest. It is located between latitudes 5.32611°N 6.47083°E and 05°19'34"N 06°28'15"E (World Geodetic System, 1984; Okonkwo *et al.*, 2015). Its southern boundary is with the Atlantic coast and serves as the entrance of Nigeria's major rivers (Benue and Niger) into the ocean. It is often regarded as the third largest wetland in the world and the largest in Africa with 2370km² of rivers and creeks and swamps (Akujuru and Ruddock, 2014; Okonkwo *et al.*, 2015; Ogbe, 2005; Olomukoro, 2005). The region occupies about 112,110 square kilometres in total land area (Table 9.1) and is estimated to take up about 12 percent of Nigeria's surface area (Ike and Emaziye 2012).

Izah (2018) describes the region as a low-lying sedimentary basin which is predominantly flat with approximately 8,600 square kilometres of stagnant swamp. It is estimated that the delta accounts for about 55 percent of Nigeria's freshwater swamps as 50 percent of its surface area is covered by swamps (Okokwo *et al.*, 2015). The region is characteristically made up of a range of different ecological zones. Although slight variations have been noted in the classification of its ecosystem by different authors (Douglas, 2003; Blench, 2007; Okonta and Ayanlade, 2014; Okonkwo *et al.*, 2015, Iza, 2018), the region is predominantly noted for its mangrove rainforest and swamps. The Niger Delta region has a high concentration of biodiversity and home to freshwater fish, tree crops, flora, and fauna. Figure 9.5 shows the geographical map of the Niger Delta region showing the constituent nine states.

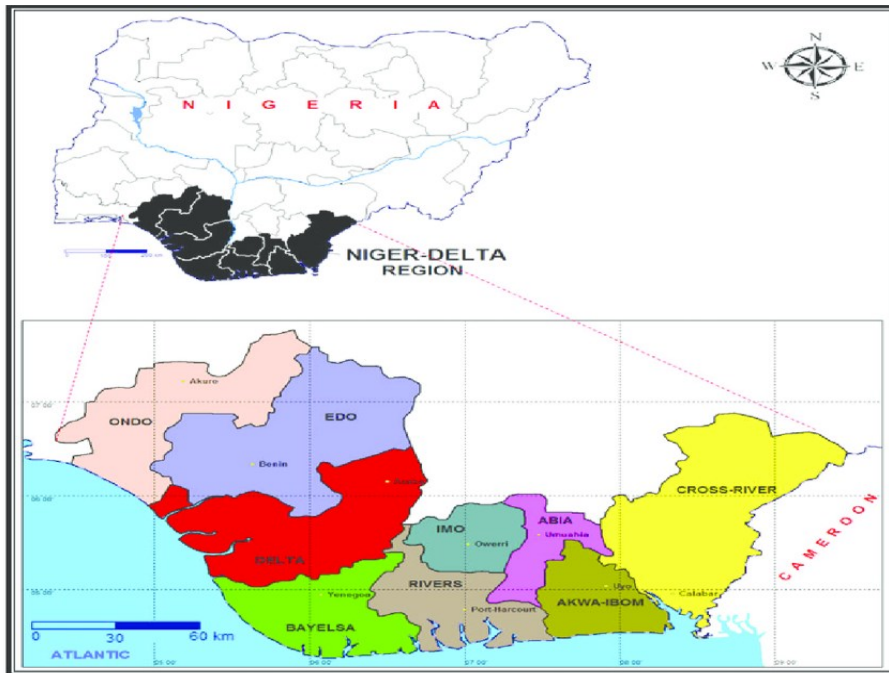


Figure 9.5: Geographical map of the political Niger Delta. Source: Nzeadibe et al., 2012

Before the discovery of crude oil in this region, agriculture (palm oil and cocoa production) was the mainstay of the economy for people in the region. The discovery of crude oil in commercial quantity in 1956 changed the dynamics and petroleum exploration has resulted in untold pollution of the biophysical environment, loss of aquatic life, and soil impoverishment (Omofonmwan and Odia, 2009). Environmental pollution and political marginalisation have caused avoidable economic hardship for the people of the Niger Delta. Its small land area within the Nigerian state and the increasing pollution of its water ways have directly interfered with the traditional economy which hitherto depended on agriculture and fisheries (Nseabasi, 2005; Akujuru and Ruddock, 2014).

9.3.2 The Niger Delta Economy

As stated earlier, a greater part of the Niger Delta region is covered with freshwater swamps. Consequently, it has sufficient water ways for a thriving fishing industry and a reasonable land for other agricultural activities. The region is naturally endowed with rich aquatic life and good arable soil. The traditional economic activities and the predominant occupation of people in the region were influenced by these factors.

People in the hinterland (the northern part of the Delta), with sufficiently arable land, engaged in land-based activities such as farming and cultivated basic crops such as yam, casava, and vegetables (Omojimate, 2011; Akujuru and Ruddock, 2014). They also engaged in fishing, hunting, and production/trade of cash crops such as rubber, and oil palm. People in the coastal areas (the southern part of the Delta) were more engaged in water-based activities given the swampy nature of the area. They were mainly engaged in fisheries and fishery-based trade. The occupational diversity of the two blocks brought about a bilateral relationship. People in the coastal areas traditionally supplied their neighbours in the hinterland with fish and fish products while people in the hinterlands supplied their coastal neighbours with food items (Omojimate, 2011). Although economic diversity was low or non-existent, the people thrived with agriculture and trade until the advent of oil and its devastating environmental impacts. As Okonta and Douglas (2003) have observed, the precolonial and colonial era trade in oil palm business with Europeans was the mainstay of the Niger Delta economy at the time.

With the advent of oil, the economy of the region, just like the larger Nigerian economy, became increasingly dependent on proceeds from oil. The environmental degradation resulting from oil exploration has left agriculture and agricultural trade non-viable. This leaves the rural people whose economic livelihood is still dependent on subsistence agriculture in penury despite the region's rich biodiversity and geodiversity. The region is blessed with abundance of renewable and non-renewable natural resources. Table 9.2 shows the natural resources available in the region. The devastating impact of environmental degradation on the livelihood of people in the Niger Delta region has been well documented (Okonta and Douglas (2003); Omojimate, 2011; Ugboma, 2015; Alaoma and Voulvoulis, 2018; Igwe, 2020). Globally, there exist a trend of unequal distribution of environmental cost resulting from resource extraction (Alaoma and Voulvoulis, 2018). Alaoma and Voulvoulis (2018) identifies this as a challenge in traditional resources management. Resource benefits are unequally distributed without due consideration to environmental costs. The Niger Delta region is worst-off given the nation's political interplay and high level of corruption. Understanding the context and complexity of the region is key to effective management and sustainability (Alaoma and Voulvoulis, 2018).

Table 9.2: Natural Resources in the Niger Delta

| Renewable | Non-Renewable |
|--|--|
| <ul style="list-style-type: none"> • water resources, • Fresh air, • Wood products (Timber, fuel wood, pole wood, etc.) • Edible vegetables, • fruits, • nuts and seeds. • medicinal plants, • palm products (raffia, palm wine etc) • fibres and tannin, • bamboo and grasses, • wildlife • Aquatic products (shell, seafoods etc.) | <ul style="list-style-type: none"> • Fossil fuels and solid minerals such as industrial clay, silica, lignite, kaolin, tar sand, decorative rocks, limestone, Salt. • construction materials such as sand, clay gravel, • crude oil and natural gas |

Source: Author with inputs from Akujuru and Ruddock, 2014

9.3.3 Food and Agricultural Resources

Given its rich aquatic life and good arable soil, the Niger Delta people are naturally engaged in agriculture. The predominant practice is subsistence farming using traditional farm tools to cultivate small sized farms. The land tenure system allows for small family units to own and cultivate pockets of small farm units (about 1 hectare). Agricultural production in the region depends on basic supply of land, seeds, and labour as the major units of production, devoid of the complexities of machineries. Table 9.3 shows the major agricultural food product available in the region. Some other agricultural products or by-products, that serve as raw materials to agro-allied industries include coffee, Cocoa, timber, palm kernel oil, rubber, raffia palms etc.

Table 9.3: Major Agricultural Food Product in the Niger Delta

| Category | Food Products |
|------------------|--|
| Cereals | Rice, maize |
| Roots and tubers | Yams, cocoyam, cassava, and potatoes. |
| Fruits | Citrus, plantain, bananas, pineapples, mangoes, local pear, guava, pawpaw, cashew, okra, tomatoes, peppers, alligator pepper |

| | |
|---|--|
| Legumes | Peanuts, cowpeas, kidney beans |
| Edible Oils | Palm oil, groundnut oil, vegetable oil, |
| Sea Food | fish, shrimps, crayfish, and molluscs such as periwinkles, oysters, and crabs etc. |
| Vegetables | pumpkin, bitter leaf, |
| Animal Meat | Meats from Cattle, goats, pigs, sheep, rabbits, poultry, |
| Wildlife | Antelopes, bush pigs, grass cutters, snails, and rats, squirrel etc. |
| Medicinal food products, Nuts, and Seeds | Kola-nut, bitter kola, melon seeds, pumpkin seeds, African bush mango seeds, cashew nuts, palm wine etc, |

Source: Author, inputs from Akujuru and Ruddock, 2014.

9.3.4 Environmental Degradation in the Niger Delta – The Role of Industrialisation

Simandan, (2019:255) describes industrialisation as “a set of economic and social processes related to the discovery of more efficient ways for the creation of value”. He explained that similar new efficient ways of value creation are lumped up as “industry” and a collection of them forms the secondary sector of economic activities while the traditional practices of agriculture and raw materials generation forms the primary sector within the industrialised entity. In Nigeria, many industries and industrial activities have thrived in its bid to develop and join the developed nations of the world. The Niger Delta region could be regarded as the “powerhouse” of the Nigerian Industrialisation drive, given that it hosts the resources that finance it. Although there are other major commercial cities in the country with large scale industrial activities, Oil revenue from the Niger Delta is the major financier of the national budget which in turns facilitates the country’s industrialisation process. The position of the Niger delta region as the powerhouse of the Nigerian industrialisation process makes it more vulnerable to the negative environmental consequences of industrialisation. Simandan, (2019) criticized the legacy of delegation of responsibility for environmental problems and the lack of internalisation of its negative environmental externalities. Although there is global apathy towards addressing environmental consequences of

industrialisation (Heath, and Gifford, 2006; Simandan, 2019), the Niger delta situation is worst-off given the peculiarity of developing countries and the increasing politization of environmental issues in Nigeria. There has been a great shift from the primary based economy that relied mostly on Agriculture and raw materials extraction, to a secondary economy whose greater percentage of its GDP comes from manufacturing or secondary industries. The service sector or tertiary industries are also evolving. Some industrial sectors that are currently thriving in the Niger Delta include oil and gas, agricultural, banking, construction, hospitality and tourism, healthcare, ICT, entertainment, consumer goods (e.g., manufacturing, pharmaceuticals), and the utility sectors.

9.3.4.1 Industries and Industrial Activities

Some industries across the primary and secondary industrial practices are more environmentally impactful than others within the Niger Delta region. Some of these industries include, the oil and gas, gin distillers, oil palm processing, sand and gravels, clay, mining, food processing, construction etc. The Oil and gas industry is the major driver of the region's development and Nigeria at large. Activities within the oil and gas sector attracts other industrial activities such as: construction and laying of pipelines, drilling, dredging and underwater construction, transportation (marine, air and land), and shipping and supplies of equipment and chemicals.

9.3.4.2 The Oil and Gas Industries

As previously mentioned, most of the oil and gas reserves in Nigeria are domiciled in the Niger Delta region. This explains why the region is host to most of Nigeria's oil explorative activities. Oil production in the region started at a low production rate of about 5100 barrels per day in 1958 (Umar *et al.*, 2021). By mid 1990s, production had increased tremendously resulting in increased number of oil drilling sites. There were about 349 drilling sites, 22 flow stations, 1,500 oil producing wells, 10 gas plants, and 3 oil terminals by the middle of 1990s (Ugbomeh and Atubi, 2010). Currently, according to the 2021 data from the Nigerian Upstream Regulatory Commission (formerly known as the DPR), hydrocarbon extraction (oil and Gas exploration for crude, condensate, and natural gas) is carried out from 323 onshore and offshore

developed oil fields. These fields are connected to 265 production stations and 31 onshore and offshore export terminals (NUPRC, 2021). A pipeline that spans about 5,284 km links 8 onshore terminals to make up the onshore processing infrastructure (NUPRC, 2021). The average production rate for 2020 was about 1.83 million barrels per day (BPD) while the daily production rate for 2021 was about 1.62 million BPD (NUPRC, 2021). It is estimated that about 670.85 million barrels of total liquid product (crude and condensate) was produced in 2020 according to the reconciled data from the DPR and the operating companies (NUPRC, 2021). The major oil companies operating in the Niger Delta region are Shell Petroleum Development Company of Nigeria limited (SPDC), Mobil Producing Nigeria Unlimited (A subsidiary of ExxonMobil in Nigeria), Chevron Nigeria Limited (CNL), Nigeria Agip Oil Company Limited (NAOC), Total Petroleum Nigeria Limited (TPNL), and Texaco Oversea Petroleum Company of Nigeria Limited. These foreign companies carry out 95 percent of Nigeria’s oil exploration under different joint ventures with the Nigerian Federal Government through the Nigerian National Petroleum Cooperation (NNPC). A summary of Nigeria’s current oil operational status is presented in Table 9.4.

Table 9.4: Nigeria’s Oil Operations – Operators, Terminals, and Current Production Status

| | | |
|--|--|--|
| Main terminals/streams and 2020 annual output for crude oil and condensate | Major Terminals/ streams | Bonny, Brass, Qua Iboe, Forcados, Escravos, Odudu (Amenam Blend), Tulja-Okwuibome, Aje |
| | Other terminals/ streams | Ima Terminals (Okoro, Asaramatoru, and Otakpipo) Antan, Okono, Yoho, Okwori, Ebok, Ajapa terminals (Atala oil and AJapa), Anambra Basin, Bonga, ERHA, Usan, Egina, Oyo, Abo, Pennington, Ukpokiti, Ugo ocha (Jones Creek), Sea Eagle (EA), Anyala Madu (CJ blend), Agbami, Akpo, Tulia - Okwuibome |
| Major International oil operators | <ul style="list-style-type: none"> ➤ Shell Petroleum Development Company of Nigeria limited (SPDC), ➤ Mobil Producing Nigeria Unlimited (A subsidiary of ExxonMobil in Nigeria), ➤ Chevron Nigeria Limited (CNL), ➤ Nigeria Agip Oil Company Limited (NAOC or Eni), ➤ Total Petroleum Nigeria Limited (TPNL), and ➤ Texaco Oversea Petroleum Company of Nigeria Limited (operator of the NNPC, Texaco-Chevron joint venture) | |
| Volume of oil production for 2020 | about 670.85 million barrels of total liquid product (crude and condensate) (According to NUPRC data) | |

| | |
|-----------------------------------|--|
| Average daily production for 2020 | about 1.83 million barrels per day (BPD) (According to NUPRC data) |
| Natural gas reserves | About 5,750 billion cubic metres (According to 2020 OPEC data) |
| Total oil reserves | 36.91 billion barrels (According to 2020 OPEC data) |

Source: Adapted from NUPRC, 2021; and OPEC, 2020

Despite the rich oil resources in the region, and its increasing industrialisation and relevance to the Nigerian economy, the region’s socio-physical environment continues to be impacted negatively leading to loss of livelihood and treats to the basic survival of the people (Emoyan, 2008). This continued impact is not met with prompt, proportionate, and corresponding government and/or private sector interventions (Emoyan, 2008; Ugbomeh and Atubi, 2010; Umar, 2021). The region continues to witness increasing instability, conflicts, insecurity, crimes, violence, and social tension (Ugbomeh and Atubi, 2010). It is characterised by widespread government neglect, absence of basic infrastructure, and socio-economic underdevelopment. These conditions heighten the need for research, interventions and mitigative measures.

9.3.4.3 Environmental Degradation: The Role of Oil Spillage and Gas Flaring

To establish the compelling need for more integrated approach to tackling environmental issues in the Niger Delta region, this work will briefly discuss the degree of environmental degradation in the region. It will also delve into the devastating role that the incessant and uncontrolled oil spillage plays in environmental devastation and its attendant effects on human health. These factors contribute immensely to the environmental crisis in the Niger Delta region hence the need for more integrated and holistic approach - a standpoint that informed the conceptualisation of this research work.

The devastating effect of industrial activities and oil explorative activities on the physical environment in the Niger Delta region have been well documented (Atuanya, 1987; Anoliefo and Vwioko, 1994; Atuma and Egborge, 1996; Ko and Day, 2004; Amakiri, 2005; Delt and Igben, 2012; Enoyan *et al*, 2008; Umar *et al.*, 2021). It is in line with these established facts that the UNDP predicted that the increasing rate of environmental degradation could result in ecological disaster (UNDP 2006).

Environmental degradation in the Niger delta region could be categorised into land resource degradation, renewable resource degradation, and environmental pollution (World Bank, 1995). According to findings from the World Bank (1995), petroleum explorative activities is prominent amongst the causes of environmental pollution (which is mostly attributed to human developmental activities). Table 9.5 shows an overview of common environmental issues in the Niger delta region.

Table 9.5: Categorisation of Environmental issues in the Nigerian Niger Delta

| Category | Types of problem | Common causes |
|---------------------------------------|--|---|
| land resource degradation | <ul style="list-style-type: none"> ❖ Agricultural land degradation. ❖ Flooding (moderate - high). ❖ Coastal erosion. ❖ Riverbank erosion. ❖ Sea level rise. | <ul style="list-style-type: none"> ❖ Impact of Climate Change ❖ Weak enforcement, regulatory Frameworks, and Institutions ❖ Heavy Rainfall, ❖ Agricultural Expansion, ❖ Construction of Infrastructure ❖ Unsuitable and Unsustainable Farming approaches ❖ Natural and Human induced land Subsidence ❖ Reduced freshwater discharge from upstream dams ❖ Population density |
| Renewable resource degradation | <ul style="list-style-type: none"> ❖ Fisheries depletion. ❖ Deforestation. ❖ Biodiversity loss (Exotic Species, Plant and Vertebrate Diversity) ❖ Water hyacinth expansion. ❖ Fisheries habitat degradation. ❖ Mangrove degradation. ❖ Nypa palm expansion. | <ul style="list-style-type: none"> ❖ Impact of Habitat Degradation ❖ upstream dams storing capacities during low rainfalls ❖ construction of hydroelectric dams, canalization and construction in the rivers and estuaries. ❖ Sewage and waste disposal, and the cutting of mangroves for fuel ❖ Poor Fishing techniques such as Dynamiting and the use of poisons for fishing ❖ Weak enforcement, regulatory Frameworks, and Institutions ❖ Forest Exploitation ❖ Forest Utilization and Conversion (Timber Extraction and wood processing) ❖ Plantations and Large-Scale Agricultural Development ❖ Construction of Infrastructure ❖ Lack of Forest Reservation and Conservation ❖ Habitat destruction and hunting. |
| Environmental pollution | <ul style="list-style-type: none"> ❖ Air pollution. ❖ Water contamination. ❖ Toxic and hazardous substances. ❖ Oil on land and water Pollution. ❖ Industrial effluents, air emissions and solid wastes ❖ Acid rain | <ul style="list-style-type: none"> ❖ Air emissions mainly originate from gas flaring ❖ Water effluents mainly originate from spillage and/or production water ❖ Waste from hazardous sludge, drilling sludge or household waste ❖ Poor response to environmental issues ❖ Weak enforcement, regulatory Frameworks, and Institutions ❖ Pollution from other industrial activities involving release of waste and effluent, e.g., from Cement industries, steel works, refineries etc. ❖ Poor urban Wastewater management ❖ Agricultural waste ❖ Vehicular emissions ❖ Municipal solid wastes. |

Source: Author with inputs from World Bank, 1995.

9.3.4.3.1 Environmental Degradation from Oil and Gas Exploration

The steady and incremental cases of environmental degradation in the Niger Delta started with the onset of oil exploration in 1958. The October 1959 oil blowout brought attention to the realities of environmental degradation associated with petroleum exploration. It is said to have rendered over 2000 people homeless. Delt and IGBEN (2012) associates increased petroleum exploitation activities to environmental degradation leading to temporal changes in occupations of the labour force. They state that it also reduces land and resources available for other economic activities in the primary sector.

Environmental degradation and Pollution from the oil and gas industries could be caused at any of the following stages.

- (i) Associated activities of oil and gas exploration and exploitation involving different explosives, drilling patterns, construction etc.,
- (ii) During actual production or oil extraction after oil have been discovered in commercial quantity.
- (iii) Gas flaring to get rid of associated gasses generated during oil and gas recovery, Coal bed methane (CBM) production, petrochemical process, and landfill gas extraction.
- (iv) During the refining stage which leads to the generation of toxic waste
- (v) During Distribution when products are transported to terminals for export and domestic use.
- (vi) From accidental discharges and spills due to operational failure
- (vii) From deliberate manipulation or interruption or breakage of the system/pipelines through sabotage to cause spillage.

Generally, pollution from oil and gas industries mainly involves the discharge of petroleum hydrocarbon (PHC) to the ecosystem. Exposure to petroleum hydrocarbons have been associated with acute myelogenous leukaemia, acute infant leukaemia, increased risk of eye irritations and headaches, multiple myeloma, and symptoms of asthma (Marinescu *et al.*, 2012; Mckenzie *et al.*, 2012). Truskewycz *et al.*, (2019: 2) states that the introduction of hydrocarbons into the environment "...kill or inhibit many microbial species, thereby altering the functionality of the microbial community and

therefore the ecosystem". Adipah (2019) emphasizes that the release of petroleum hydrocarbons into the environment could lead to the contamination of drinking water, risk of fire and explosion, reduction in air quality, destruction of recreational areas, habitat destruction food shortage, and waste of non-renewable resources. The author further concludes that this makes PHC contamination a treat to public health and safety.

Total Petroleum hydrocarbons are mixtures of organic compounds derived from crude oil (Adipah, 2019). They are generally made up of carbon and hydrogen but may contain other compounds such as nitrogen, heavy metals, sulphur, and oxygen compounds etc. The major components or fractions of petroleum hydrocarbons that are major contaminants include diesel, kerosine, gasoline, heavy oils, natural gas, and crude oil itself (Ahmed and Fakhruddin, 2018). The chemical composition of PHCs may vary depending on source although its toxicity remains a concern with chemicals like benzene and polycyclic aromatic hydrocarbons (PAHs) being of major concern (Truskewycz *et al.*, 2019). Upon introduction of PHCs to the environment, the various mixtures of its components (branched alkanes, n-alkanes, polyaromatic hydrocarbons (PAHs) and cyclo-alkanes) interact differently depending on their molecular properties (Pampanin, 2017; Ahmed and Fakhruddin, 2018; Truskewycz *et al.*, 2019). Their chemical structures could be categorised as the aromatics, the saturates, the resins, and the asphaltenes (Truskewycz *et al.*, 2019). The interaction of its component with the environment results in various outcomes such as:

- a) Volatilization of lighter aromatic components into the atmosphere which eventually pollutes they air and may cause irritation and fire risk.
- b) Reduced plants nutrient and mineral leading to Plant death,
- c) Reduction in available soil and air oxygen creating anaerobic zones leading to reduced growth or death or organisms,
- d) Interference with nutrient and water transmission thereby altering soil structure
- e) Hydrocarbon percolation causing further contamination,
- f) Initial decrease in microbial populations and diversity thereby altering environmental conditions
- g) Contamination of groundwater by hydrocarbon.

Generally, PHC have proven to be toxic to most microbial activities (Mukherjee *et al.*, 2014) and capable of locking plant and microbial nutrients and water. It alters soil pH levels which in turn affects the overall wellbeing of plants. These effects have all been experienced in the Niger Delta region from cases of farmlands losing their potency to cases of fishermen losing their means of livelihood. More details of the adverse effects on the Niger Delta communities are detailed in subsequent subheads. Table 9.6 shows some adverse effect of petroleum hydrocarbon on some plant species. Similar effects as shown in Table 9.6 are inflicted on some arable crops. This ultimately affects the socio-economic and health status of people within the host communities of Niger Delta states.

Table 9.6: Effects of petroleum hydrocarbon to some plant species

| Toxic effects | Plant species |
|--|---|
| Root development is reduced | Red beans (<i>Phaseolus nipponesis</i>) and corn (<i>Zea mays</i>) |
| A significant reduction in heights of seedlings, leaf length, and number of leaves | Soybean (<i>Glycine max</i>) |
| Significant reductions in plant height, leaf area and stem diameter were observed | Maize (<i>Zea mays</i> L.) |
| Hindered germination, reduced heights, and girths were observed | <i>Abelmoschus esculentus</i> |
| The plant growth was reduced significantly in low levels | Horsetail tree (<i>Casuarina equisetifolia</i>) |
| Crude oil pollution has an adverse effect on growth, yield, and leaf chlorophyll content | Air Potato (<i>Dioscorea bulbifera</i> L.) |
| Reduction in the length of the radicle for the four crop plants | <i>Arachis hypogaea</i> , <i>Vigna unguiculata</i> , <i>Sorghum bicolor</i> , and <i>Zea mays</i> |

Source: Alzahrani and Rajendran, 2019

As stated earlier, Oil spillage and gas flaring are major causes of environmental degradation in the region (Ko and Day, 2004). They are seen as major avoidable factors leading to the introduction of toxic petroleum hydrocarbons to the physical environment. Large quantities of petroleum hydrocarbon are still being introduced into the environment through other factors, such as, effluent from production water. However, petroleum hydrocarbon from oil spills remains a great concern given its increasing frequency of occurrence. The history of oil spillage in the region is as old

as the discovery of oil itself. The 1970 oil spill involving about 150 barrels of oil is recorded as the first oils spill in the region. Between 1971 and 2001, an estimate of about 6800 incidences of oil spills involving about 3,000,000 barrels of oil is recorded to have occurred (UNDP, 2006). Similarly, between 2006 and 2010, about 2,400 incidences of oil spills occurred according to the National Oil Spill Detection and Response Agency (NOSDRA). Amnesty International (2018) documented the dishonesty of some major oil companies in accurately reporting incidences and causes of oil spills in the region. They stated that since 2014, Shell company alone have reported 1,010 incidences of oils spills while the government records showed 1369 incidences. A total of about 110,535 barrels or 17.5 million litres of oils was spilled from the reported 1010 incidences (Amnesty International, 2018). The numerous oil pipelines running across different storage sites and refinery all serve as potential channels for oil spillage. Incidences of oil spillages occur along these pipelines and storage facilities. The oil companies often attribute these spillages to sabotage, but incidences of failures caused by pipeline corrosion, material defect, and ground erosion are very common (Ko and Day, 2004; Kadafa, 2012; Amnesty International, 2018). The DPR attributes 88 percent of oil spill incidences to equipment failure, however vandalism, accidental releases, oil blowouts from flow station, and oil tankers accidents at sea are also significant causes of oil spillage (Kadafa, 2012). Table 9.7 shows some polluted sites in the Niger delta and the nature of incidence that led to the pollution.

Table 9.7: Some Severely Oil Polluted Sites in the Niger Delta

| Location | Environment | Impacted Area (ha) | Nature of Incidence |
|----------------------|-------------------------------------|--------------------|--------------------------------|
| Bayelsa State | | | |
| Biseni | Freshwater Swamp Forest | 20 | Oil Spillage |
| Etiama/Nembe | Freshwater Swamp Forest | 20 | Oil Spillage and Fire Outbreak |
| Etelebu | Freshwater Swamp Forest | 30 | Oil Spill Incidence |
| Peremabiri | Freshwater Swamp Forest | 30 | Oil Spill Incidence |
| Adebawa | Freshwater Swamp Forest | 10 | Oil Spill Incidence |
| Diebu | Freshwater Swamp Forest | 20 | Oil Spill Incidence |
| Tebidaba | Freshwater Swamp Forest Mangrove | 30 | Oil Spill Incidence |
| Nembe creek | Mangrove Forest | | Oil Spill Incidence |
| Azuzuama | Mangrove | | Oil Spill Incidence |
| Delta state | | | |
| Opuekebe | Barrier Forest Island | 50 | Saltwater Intrusion |
| Jones Creek | Mangrove Forest | 35 | Spillage and burning |

| | | | |
|---------------------|-------------------------|----|-----------------------------|
| Ugbeji | Mangrove | 2 | Refinery Waste |
| Ughelli | Freshwater Swamp Forest | 10 | Oil Spillage-Well head leak |
| Jesse | Freshwater Swamp Forest | 8 | Product leak/Burning |
| Ajato | Mangrove | | Oil Spillage Incidence |
| Ajala | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Uzere | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Afiesere | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Kwale | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Olomoro | Freshwater Swamp Forest | | QC |
| Ughelli | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Ekakpare | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Ughuvwughe | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Ekerejegbe | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Ozoro | Freshwater Swamp Forest | | Oil Spillage Incidence |
| Odimodi | Mangrove Forest | | Oil Spillage Incidence |
| Ogulagha | Mangrove Forest | | Oil Spillage Incidence |
| Otorogu | Mangrove Forest | | Oil Spillage Incidence |
| Macraba | Mangrove Forest | | Oil Spillage Incidence |
| Rivers State | | | |
| Rumuokwurusi | Freshwater Swamp | 20 | Oil Spillage |
| Rukpoku | Freshwater Swamp | 10 | Oil Spillage |

SOURCE: Kadafa (2012).

Another major oil sector cause of environmental degradation is Gas Flaring. During crude oil extraction, some substances such as inorganic matter, water, and natural gas accompany the extracted oil. These substances are separated from crude oil during production and the accompanying water is released to the environment while the natural gas is vented, conserved, or flared. Natural gas is a potentially hazardous by-product that is less profitable, therefore the primary objective of flaring is to convert the hydrocarbon content (e.g., methane) to less-hazardous products (AAAS, 2011; Fawole *et al.*, 2016). However, the choice of flaring as a method for converting or getting rid of the hazardous hydrocarbon is considered a cost saving approach because other disposal methods (such as subterranean re-injection or confinement to storage tanks for eventual sale) are more costly (AAAS, 2011). Giwa *et al.*, (2019: 209) describes gas flaring as “the rapid oxidation of natural gas with the release of gaseous and particulate pollutants, and heat into the atmosphere”. Gas flaring have been associated with pollution and its attendant environmental degradation (Obanijesu *et al.*, 2009; Kadafa, 2012; Fakinle *et al.*, 2021). It is a major source of Nitrogen oxides (NO and NO₂), Carbon oxides (CO and CO₂), Volatile organic compounds (benzene, 1,3-butadiene etc.), Sulphur dioxide (SO₂), Polycyclic aromatic

hydrocarbons (PAHs) (naphthalene), and black carbon(soot), which have direct and indirect effects on global climatic conditions. These pollutants can potentially cause greenhouse effects and acid rain (AAAS, 2011; Fawole *et al.*, 2016; Fakinle *et al.*, 2021). In most cases (like in the NDR), flaring is done near human or wildlife habitation, thereby raising human health and environmental concerns (AAAS, 2011). The quantity and type of contaminants released through gas flaring depends on the composition and volume of natural gas flared (Fawole *et al.*, 2016). Other factors influencing the quantity and types of pollutants released include flare design and geometry, meteorological conditions, and combustion variables (Torres *et al.*, 2012; Fawole *et al.*, 2016; Giwa *et al.*, 2019). Fawole *et al.* (2016), in his global compilation of the composition of natural gas from 10 stations shows that typically, natural gas is made up of combinations of C₁ to C₇₊ hydrocarbons (predominantly alkanes). In addition to these, higher molecular weight alkanes may also accompany the gas as the separation process (separating gas from crude oil) at the flow stations may not always be perfect. These varying gas compositions affects their thermodynamic properties thereby influencing the quality of pollutants released during combustion.

Globally, about 150 billion cubic metres (bcm) of natural gas are flared annually (Farina, 2011; Giwa *et al.*, 2019; World Bank, 2021). Within the last five years, global flaring volumes have fluctuated between 148bcm in 2016, 150bcm in 2019 and 142bcm in 2019, with a net reduction of about -7.88 bcm between 2016 and 2020 (World Bank, 2021). The top seven flaring countries include Russia, Iraq, Iran, United States, Algeria, and Nigeria and they collectively account for about 65 percent of the world's flaring volume. Although several events including the Covid-19 pandemic contributed to an 8 percent net reduction in oil production in 2021, flaring volume only reduced by a 5-percentage point in the same period (world bank 2021). Figure 9.6 shows the Flare volumes for the top 10 flaring countries from 2016 to 2020. Nigeria is amongst the major flaring countries particularly when considering its volume of oil production. It has about 5,750 billion cubic metres of natural gas reserves and is globally ranked number seventh amongst the global flaring nations. According to the 2021 tracking report from the US Energy Information Administration, most of the flaring sites are concentrated in the Niger Delta, making the region more susceptible to adverse environmental effects.

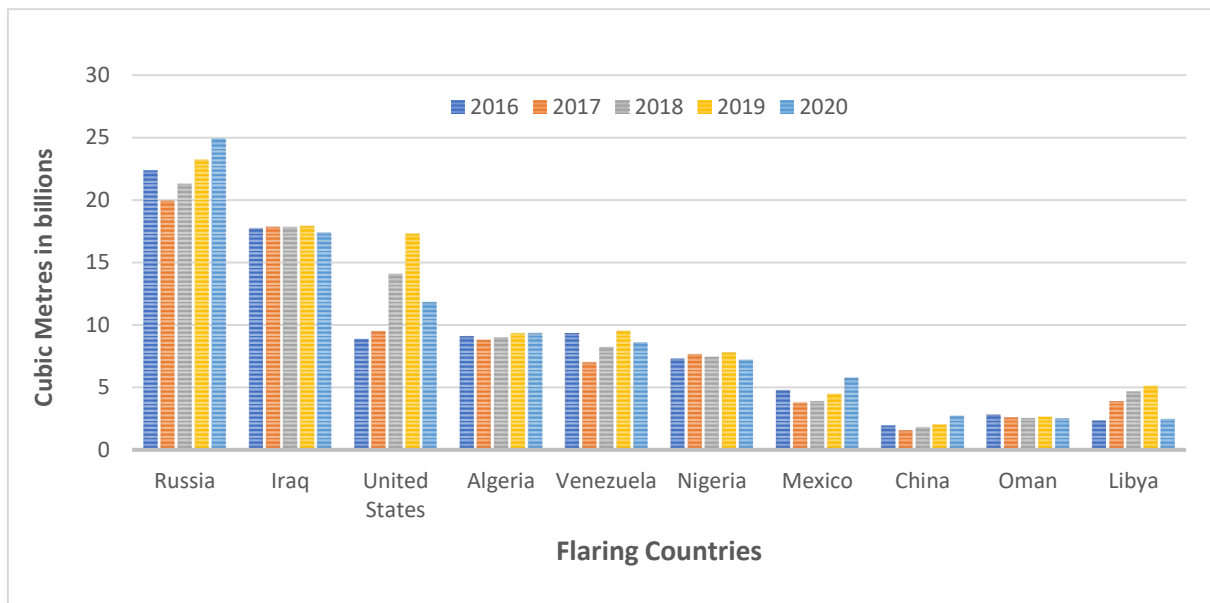


Figure 9.6: Flare volumes for the top 10 flaring countries from 2016-2020 (sorted by 2020 flare volume)

Source: Global Gas Flaring Tracker Report, World Bank (2021)

Nigeria flared about 7.20 billion cubic metres of gas in 2020, a reduction of about - 0.63 from the 2019 figure (World Bank, 2021). The Niger Delta is estimated to have about 123 gas flaring sites as of 2004, which collectively discharged about 45.8 billion kilowatts of heat to the atmosphere (Kadafa, 2012). Apart from organised flaring activities, other accidental fire outbreaks (relating to the activities of oil and gas production), are common in the region (Kadafa, 2012). They often result in the destruction of human and economic resources. Acid rain, caused by high concentration of flaring products in the atmosphere is in the increase within the region. Its concentration is higher in the region and reduces as you go further away from it. Heat, another major by-product of gas flaring, adversely affects vegetation, destroys mangroves swamps, and decreases agricultural production (UNDP, 2006; Kadafa, 2012; Fakinle *et al.*, 2021).

The concentration of these adverse environmental and health effects and the overall effects of other oil explorative activities make the region most susceptible to health challenges. The collective effects of these environmental and health challenges hinder the attainment of the global sustainable development goal (United Nations, 2021).